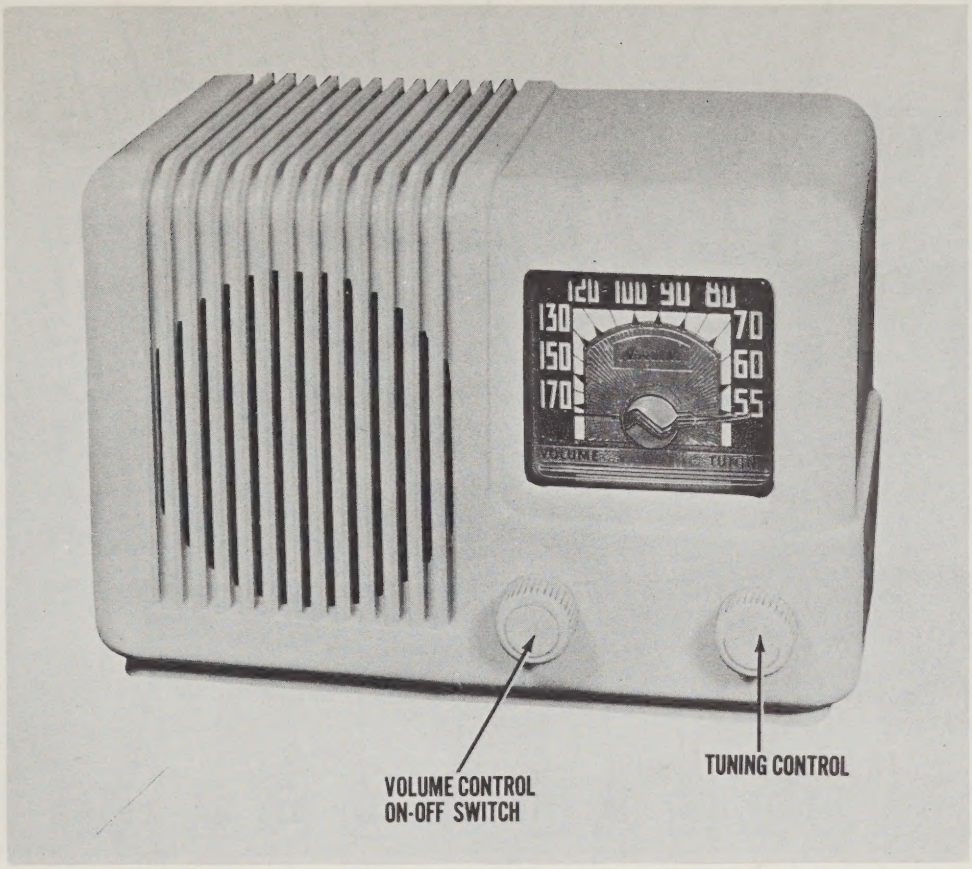

AIRCASTLE
MODEL 5002

AIRCASTLE
MODEL 5002

AIRCASTLE MODEL 5002

TRADE NAME	Aircastle, Model 5002
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver-Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7 or 12BA6 RF Amp., 12SA7 Converter, 12SK7 or 12BA6 IF Amp., 12SQ7 or 12AT6 Det.-AVC-AF, 35L6GT Power Output, 35Z5GT or 35W4 Rectifier.
POWER SUPPLY	110-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1720KC RATING .220 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn variable fully closed and set pointer parallel to horizontal line on dial plate at low frequency end. Volume control should be at maximum and output of signal generator no higher than necessary to obtain output reading. Use isolation transformer if available. If not connect a capacitor in series with low side of signal generator and B-. Use insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	Variable fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	.1 MFD.	"	1720KC	"	"	A5	Adjust for maximum output.
3	200 MMFD	High side to ext. ant. lead. Low side to B-.	1400KC	Tune for maximum output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODEL 5002

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AIRCASTLE PART No.	STANDARD REPLACEMENT		
1A	RF Amp.	12SK7GT	12SK7GT	8N	
B	RF Amp.	12BA6	12BA6	7CC	
2	Converter	12SA7GT	12SA7GT	8AD	
3A	IF Amp.	12SK7GT	12SK7GT	8N	
B	IF Amp.	12BA6	12BA6	7CC	
4A	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
B	Det.-AVC-AF	12AT6	12AT6	7BT	
5	Power Output	35L6GT	35L6GT	7AC	
6A	Rectifier	35Z5GT	35Z5GT	6AD	
B	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7A	50	150		PRSA150-40-40	BRD3515	2N520	DSB-5030-150	TA-530	Filter - Red
B	30	150							" - Blue
8	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
9	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Output Plate Bypass
10	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
11	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	"
12	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
13	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
14	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter *
15	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Ant. Coupling
16	500	500		1468-0005	5W5T5	MC245	MO.5-35	1FM-35	Audio Plate Bypass
17	150	500		1468-00015	5W5T15	MC236	MO.5-315	1FM-315	IF Bypass Diode
18	47	500		1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
19	150	500		1468-00015	5W5T15	MC236	MO.5-315	1FM-315	RF Coupling

*Not used in all models.

CONTROLS

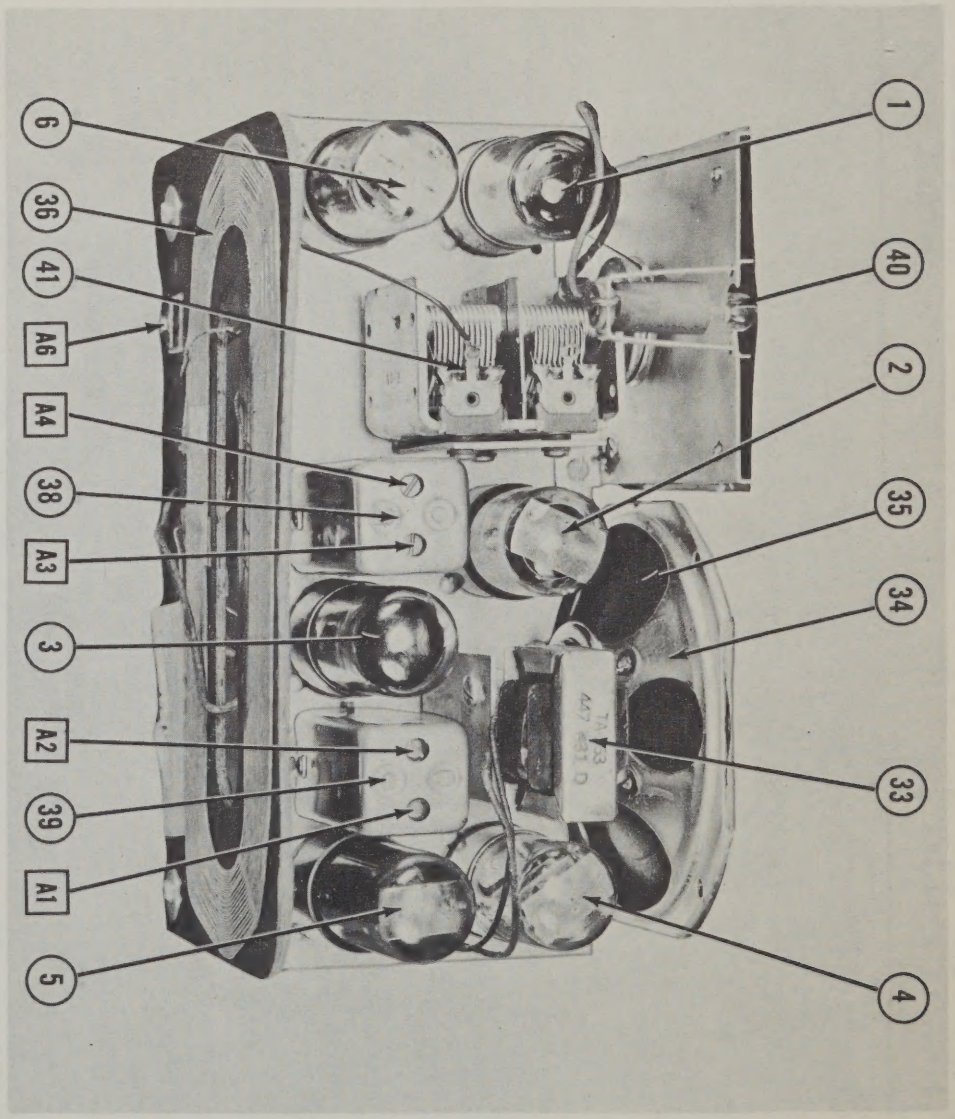
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AIRCASTLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
20A	1 Meg.	1	VC-3	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 20A per instruction
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRCASTLE PART No.	IRC PART No.	
21	2200Ω	½	IR-7	BTS-2200	Red-Red-Red RF Plate Load
22	47KΩ	½	IR-10	BTS-47K	Yl.-Vi.-Or. Converter Grid
23	33KΩ	½	IR-16	BTS-33KΩ	Or.-Or.-Or. Oscillator Grid
24	1 Meg.	½	IR-12	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network-See Note 1
25	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. " " " " " 2
26	2 Meg.	½	IR-13	BTS-2.2 Meg.	Red-Blk.-Grn. AF Grid
27	560KΩ	½		BTS-560K	Grn.-Blue-Yl. AF Plate Load
28	560KΩ	½		BTS-560K	Grn.-Blue-Yl. Output Grid
29	220Ω	½	IR-5	BW-½-220	Red-Red-Br. Output Cathode
30	2200Ω	½	IR-15	BTS-2200	Red-Red-Red Filter
31	47Ω	½	IR-4	BW-½-47	Yl.-Vi.-Blk. Rectifier Ballast
32	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Diode RF Filter

Note 1 - Not used in all models.
Note 2 - Models using Item #24 use 2 Meg. resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
33	2040Ω	2.8Ω	150Ω	.6Ω	Part of SPK-4	A-3876 #	T22S45 #		# Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCASTLE PART No.	JENSEN PART No.		
34	FIELD PM	VC IMP. 2.8Ω	SPK-4	ST-105† Mod. P5-X		†Fabricate new mounting bracket.
35	CONE DIA. 4-9/16"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

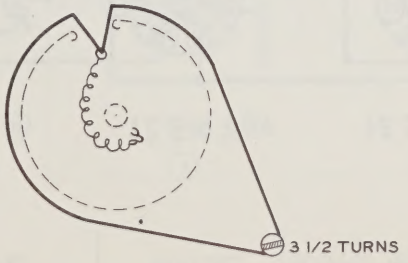
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	AIRCASTLE PART No.	MEISSNER PART No.	
36	Loop	.1Ω	1.5Ω	LL-1		
37	Osc. Coil		7.8	LO-2	14-1040	
38	Input IF	19Ω	19Ω	LI-1	16-6666	
39	Output IF	20.5Ω	19Ω	LI-2	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIRCASTLE PART No.		
40	Bayonet	6-8	0.15	Brown			Type 47

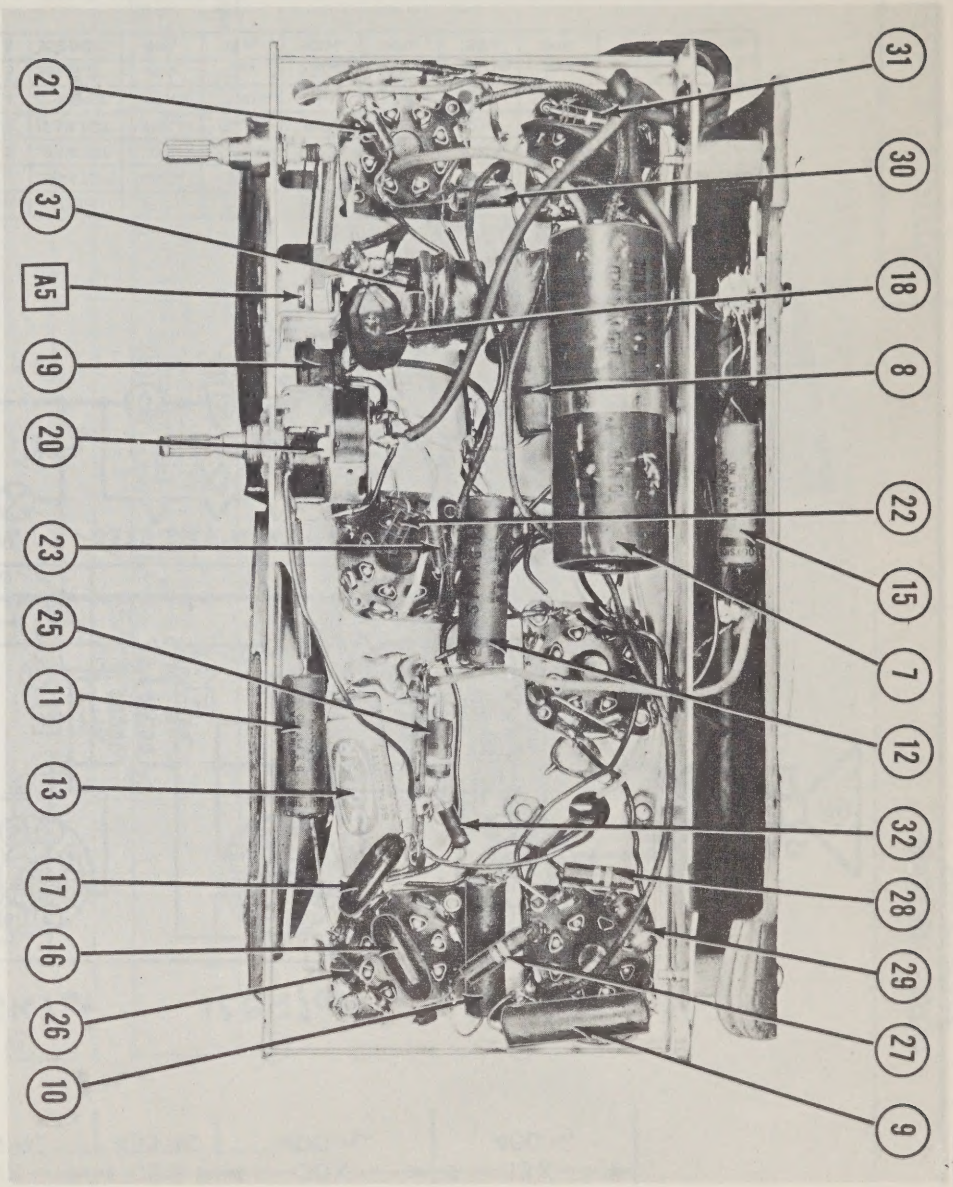
MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
41	2 Gang Var. Cap.	GC-2	(12-176 MMF, 16-385 MMF)
A5	Trimmer	TC-6	Osc. Trimmer
A6	Trimmer	TC-7	Ant. Trimmer

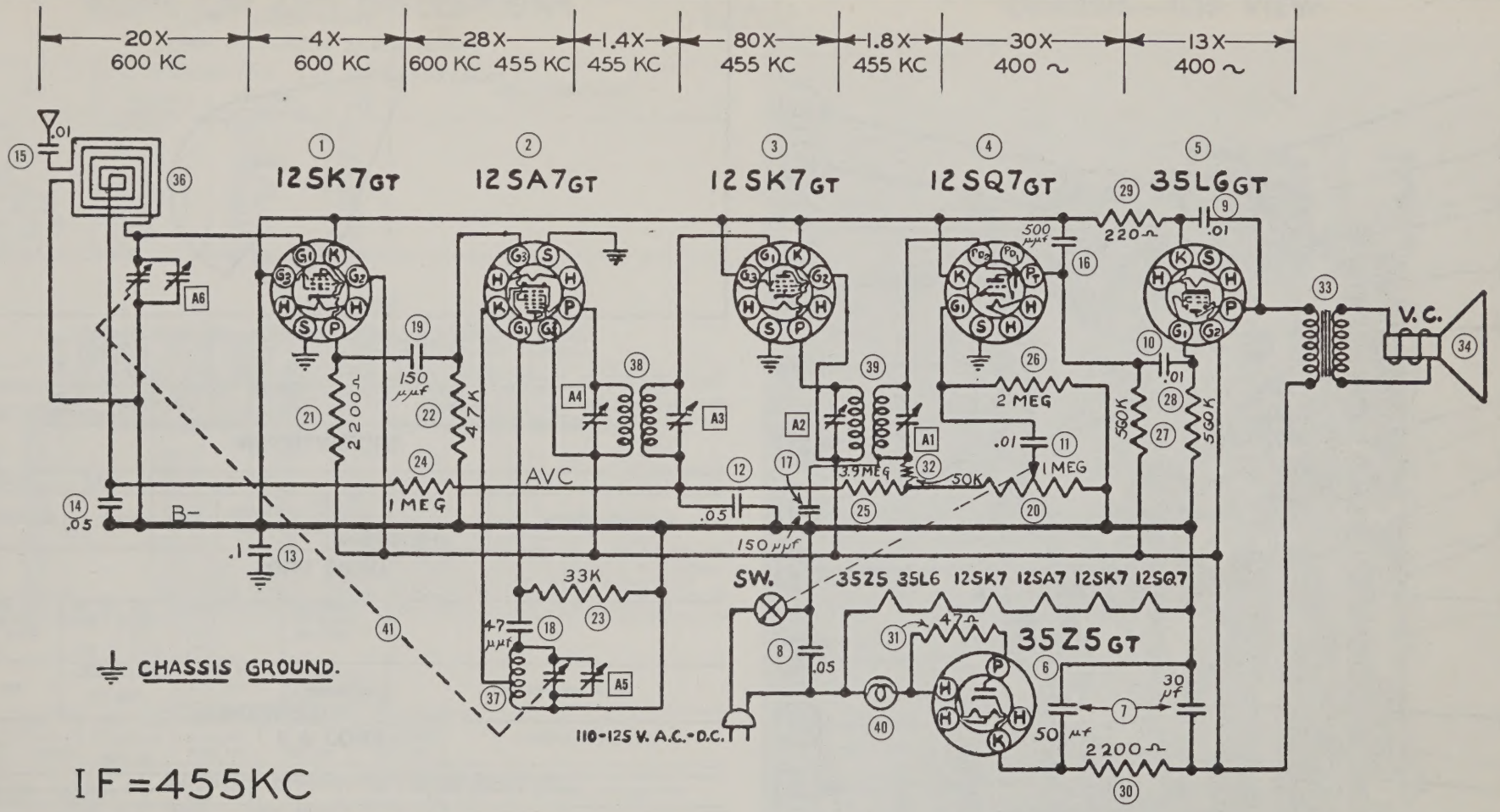


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AIRCASTLE MODEL 5002



IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	36 V.AC	0V.	-.9 V.DC	0V.	67 V.DC	25 V.AC	52 V.DC
2	12SA7GT	0V.	25 V.AC	67 V.DC	67 V.DC	-3.9V.DC	0V.	13 V.AC	0V.
3	12SK7GT	0V.	51 V.AC	0V.	-.9 V.DC	0V.	67 V.DC	36 V.AC	67 V.DC
4	12SQ7GT	0V.	-1 V.DC	0V.	-.4 V.DC	-.4 V.DC	33 V.DC	13 V.AC	0V.
5	35L6GT	0V.	87 V.AC	121 V.DC	67 V.DC	0V.	0V.	51 V.AC	4.1 V.DC
6	35Z5GT	0V.	117 V.AC	113 V.AC	0V.	112 V.AC	0V.	87 V.AC	124 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	INF.	33Ω	0Ω	4 MEG.	0Ω	65KΩ	23Ω	66KΩ
2	12SA7GT	0Ω	23Ω	55KΩ	55KΩ	30KΩ	.5Ω	12Ω	37KΩ
3	12SK7GT	INF.	43Ω	INF.	4 MEG.	0Ω	55KΩ	33Ω	55KΩ
4	12SQ7GT	0Ω	1.7 MEG.	0Ω	470KΩ	INF.	580KΩ	12Ω	0Ω
5	35L6GT	INF.	71Ω	55KΩ	55KΩ	480KΩ	0Ω	43Ω	180Ω
6	35Z5GT	INF.	95Ω	93Ω	INF.	130Ω	INF.	71Ω	55KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

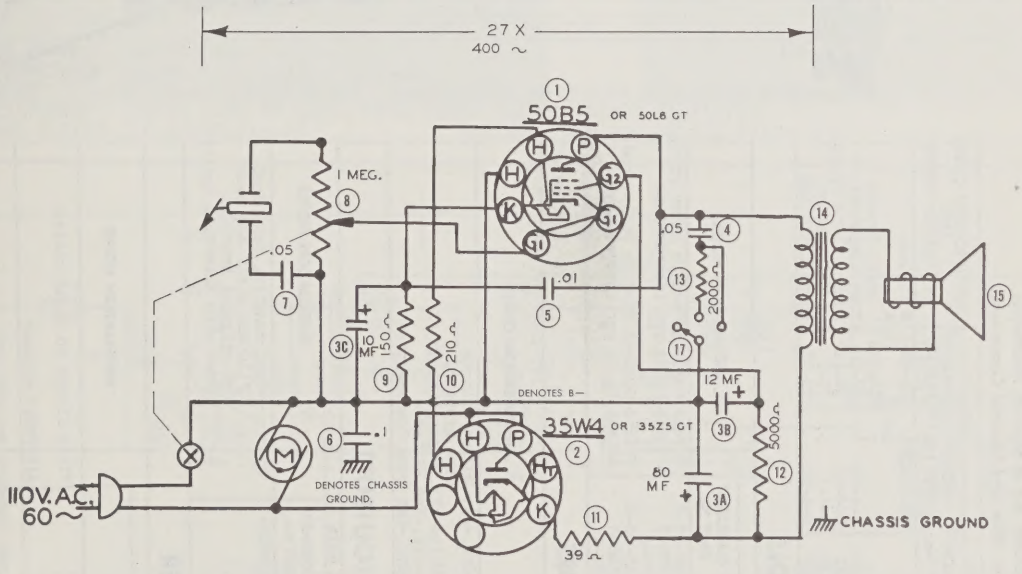
479-1

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AIRCASTLE MODEL 7004

TRADE NAME	Aircastle, Model 7004
SUPPLIER	Speigel, Inc., 1061 W. 35th St., Chicago, Ill.
TYPE SET	AC Operated Phonograph with 2 Tube Amplifier and Speaker
TUBES (TWO)	Types, 50L6GT or 50B5 Power Output, 35Z5GT or 35W4 Rectifier
POWER SUPPLY 110-125 Volt AC	RATING .220 Amp. @ 117 Volts



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	50L6 GT	0V.	52V. AC	115V. DC	110V. DC	0V.	0V.	0V.	7.8V. DC
2	35Z5 GT	0V.	117V. AC	113V. AC	0V.	117V. AC	0V.	85V. AC	132V. DC

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RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	50L6 GT	INF.	42 Ω	100 KΩ	100 KΩ	900 KΩ	INF.	0 Ω	135 Ω
2	35Z5 GT	INF.	235 Ω	233 Ω	INF.	235 Ω	INF.	220 Ω	100 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-2

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1A	Power Output	50L6GT	50L6GT	7AC	
B	" "	50B5	50B5	7BZ	
2A	Rectifier	35Z5GT	35Z5GT	6AD	
B	"	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	80	150	EC-5	AF444D	UP2215		DY-804020-150	EL-35	■ Filter
B	12	150						"	▲ "
C	10	150		PRS150-50	BR8015			TA-212	Cath. Bypass
4	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	Tone Compensation
5	.01	400	PC-7	484-01	DT4S1	TP421	S-4-01	TC-11	Output Plate Bypass
6	.1	400	PC-8	484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
7	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	Phono Isolation

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
8A	1 Meg.	1	VC-3	MK402	D13-137	AM-63-Z	Volume Control-Used in later prod.
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 8A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
8A	500KΩ	1	VC-6	MK401	D13-133	AM-60-Z	Volume Control-Used in early prod.
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 8A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
9	150Ω	½	1R-14	BW-½-150	Br.-Grn.-Br. Output Cathode
10	210Ω	5	WR-1		Line Dropping
11	39Ω	½	1R-17	BW-½-39	Or.-White-Blk. Surge Limiter
12	5KΩ	1	1R-18	BTA-4700	Grn.-Blk.-Red Filter
13	2KΩ	½	1R-7	BTS-2200	Red-Blk.-Red Tone Compensation

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
14A	2040Ω	2.8Ω	150Ω	.59Ω	Part of SPK-4	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket. Used with alternate speaker.
B					Part of SPK-2				

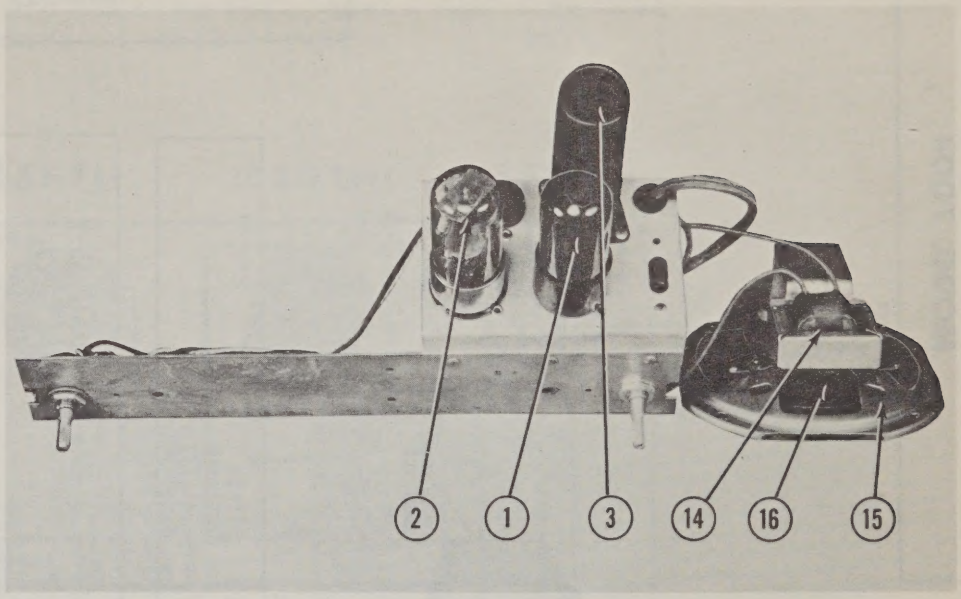
SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA: AIRCASTLE PART No.	JENSEN PART No.		INSTALLATION NOTES
15A	FIELD PM; VC IMP. 2.8Ω	SPK-4	ST-105† Mod. P5-X		†Trim flange to clear cabinet.
B		SPK-2			Alternate speaker
16	CONE DIA. 4-9/16"; VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

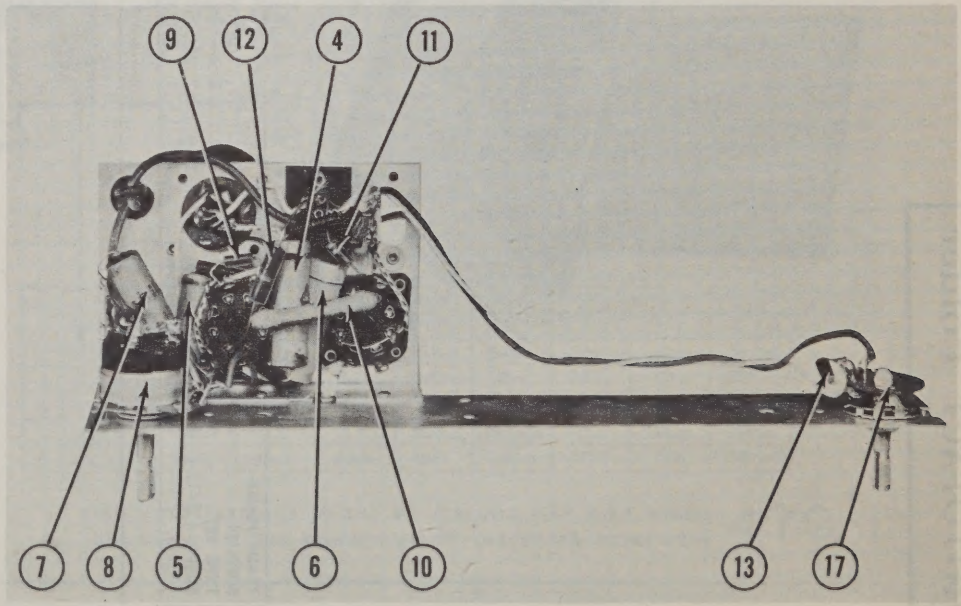
MISCELLANEOUS

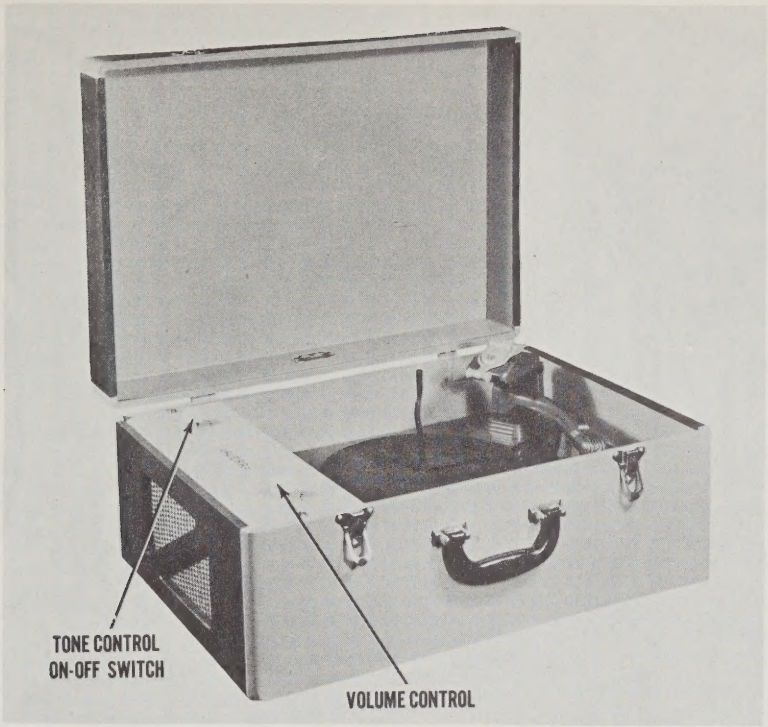
ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
17	Tone Switch	SW-2	
	Pickup Crystal	PU-2	Astatic L-72

CHASSIS—TOP VIEW



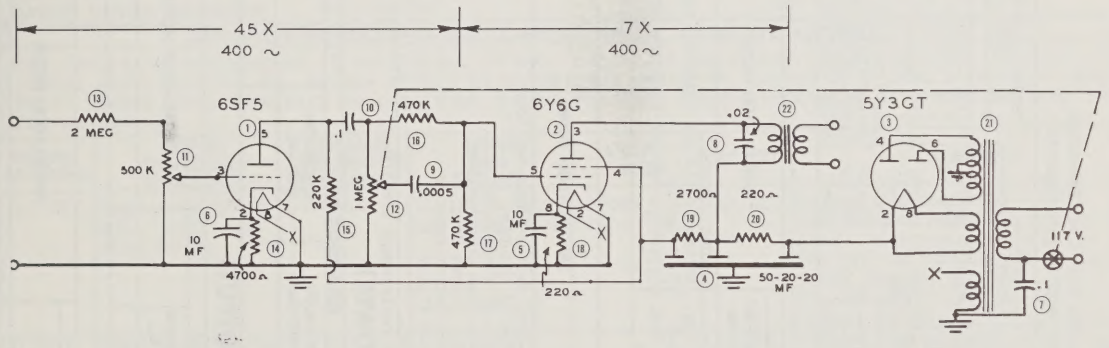
CHASSIS—BOTTOM VIEW





AUDAR MODEL P-4A

TRADE NAME	Audar, Model P-4A
MANUFACTURER	Audar Inc., Argos, Indiana
TYPE SET	AC Operated Automatic Phonograph with 3 Tube Amplifier & Speaker
TUBES (THREE)	Types, 6SF5 AF Amp., 6Y6G Power Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .360 Amp. @ 117 Volts AC



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SF5	0V.	1 V.DC	0V.	0V.	100 V.DC	0V.	6.4 V.AC	0V.
2	6Y6G	0V.	0V.	145 V.DC	155 V.DC	0V.	165 V.DC	6.4 V.AC	14.5 V.DC
3	5Y3GT/G	0V.	177 V.DC	0V.	180 V.AC	0V.	180 V.AC	165 V.DC	177 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SF5	0Ω	4400Ω	470KΩ	470KΩ	270KΩ	INF. Ω	Ω	0Ω
2	6Y6G	INF. Ω	0Ω	48KΩ	48KΩ	460KΩ	48KΩ	Ω	200Ω
3	5Y3GT/G	INF. Ω	48KΩ	INF. Ω	100Ω	INF. Ω	105Ω	48KΩ	48KΩ

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-3

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AUDAR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	6SF5	6SF5	6AB	
2	Power Output	6Y6G	6Y6G	7AC	
3	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AUDAR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	50	150	CE-LHH-4	PRSA150-50-30	EZ42215	2N520	DSB-403020-150	UT-501 TA-220	Filter - Red " - White
B	20	150		PRS150-20		TC45		" - "	
C	20	150							
5	10	25	CE-E-1	PRS25-10	BR102A	TC22	M-10-25	TA-10	Cath. Bypass
6	10	25	CE-E-1	PRS25-10	BR102A	TC22	M-10-25	TA-10	"
7	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Line Filter
8	.02	400	CP-12-9	484-02	DT4S2	TP423	S-4-02	TC-12	Output Plate Bypass
9	.0005	400	CP-35-9	1468-0005	DT6T5	TP403	S-6-00005	TC-35	Tone Compensation
10	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Audio Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUDAR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
11A	500KΩ	1	RVC-504-0	MR50	D11-133	M-58-S	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 11A per instructions
12A	1 Meg.	1	RVC-105-S	MR53	D13-137	M-63-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 12A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AUDAR PART No.	IRC PART No.	IDENTIFICATION CODES
13	2 Meg.	½	RC-105-C	BTS-2.2 Meg.	Br.-Blk.-Grn. Series Phono-See Note
14	4700Ω	1	RC-472-D	BTA-4700	Yl.-Vi.-Red AF Cathode
15	220KΩ	½	RC-224-C	BTS-220K	Red-Red-Yl. AF Plate Load
16	470KΩ	½	RC-474-C	BTS-470K	Yl.-Vi.-Yl. Tone Compensation
17	470KΩ	½	RC-474-C	BTS-470K	Yl.-Vi.-Yl. Output Grid
18	220Ω	2	RC-221-E	BW-2-220	Red-Red-Br. Output Cathode
19	2700Ω	1	RC-272-D	BTA-2700	Red-Vi.-Red Filter
20	220Ω	2	RC-221-E	BW-2-220	Red-Red-Br. "

Note - Some models use 1 Meg. in this application. IRC replacement BTS-1 Meg.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AUDAR PART No.	STANCOR PART No.	THORDARSON PART No.	
21	117V AC @ .36A	360V CT @ .062A	5.0V AC @ 1.8A	6.4V AC @ 1.5A	TPSA-13-D			

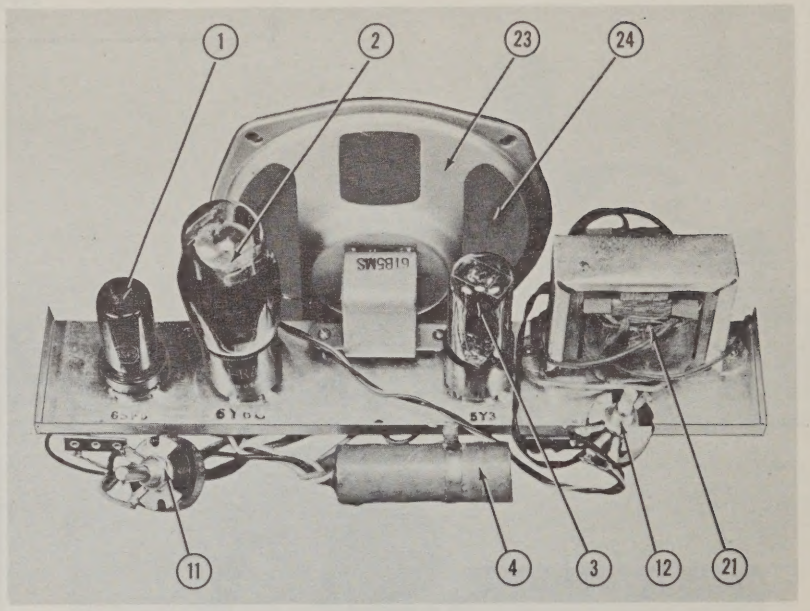
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AUDAR PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
22	1800Ω	3.3Ω	370Ω	.6Ω	TOS-20-3	A-3876	T22S45		

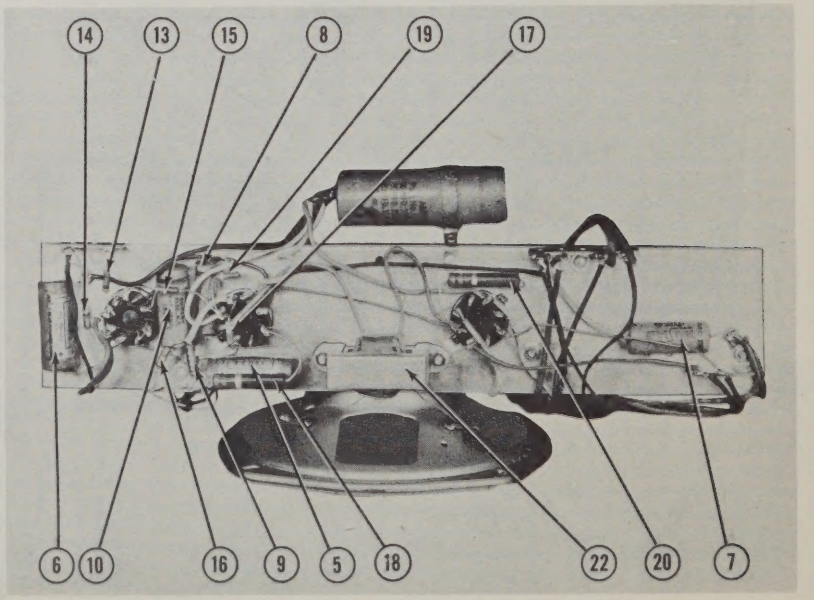
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AUDAR PART No.	JENSEN PART No.		INSTALLATION NOTES
23	FIELD PM	VC IMP. 3.3Ω		ST-108* Mod. P6-X		*Fabricate new mounting bracket.
24	CONE DIA. 6"	VC DIA. 1/2"	NOT READILY REPLACEABLE -USE COMPLETE SPEAKER UNIT			

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



AUDAR MODEL PR-6A

TRADE NAME	Audar, Model PR-6A
MANUFACTURER	Audar Inc., Argos, Indiana
TYPE SET	AC Operated Phono-Radio Combination Superheterodyne Receiver
TUBES (FOUR)	Types, 14Q7 Converter, 14B6 Det.-AVC-AF, 50L6GT Power Output, 35Y4 Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1650KC RATING .235 Amp. @ 117 Volts AC.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD.	High side to ext. ant. lead. Low side to B-.	455KC	Tuning slugs out completely	Across voice coil	A1,A2,	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to 200 MMF to reduce hum modulation. Repeat adjustments of A1, A2 until no further increase in output is obtained.
2	DIRECT	High side to insulation of ant. lead. (Not to the bare wire). Low side to B-.	1650KC	"	"	A3,A4.	Adjust for maximum output.
3	"	"	540KC	Tuning slugs in completely.	"	A5	" " " "
4	"	"	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output. Repeat steps 2, 3 and 4.

DISASSEMBLY INSTRUCTIONS

1. Loosen set screws and remove three control knobs.
2. Remove four wood screws holding phono mounting board to cabinet.
3. Remove lock nuts holding control shafts.
4. Remove two wood screws holding cover board over back of speaker. Remove board.
5. Remove four hex nuts holding speaker to cabinet. Remove speaker.
6. Unsolder speaker leads from chassis.
7. Unsolder phono-motor leads from chassis.
8. Unsolder phono pick-up leads from chassis.

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PARTS LIST AND DESCRIPTIONS

AUDAR
MODEL PR-6A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		AUDAR PART No.	STANDARD REPLACEMENT		
1	Converter	14Q7	14Q7	8AL	
2	Det.-AVC-AF	14B6	14B6	8W	
3	Power Output	50L6GT	50L6GT	7AC	
4	Rectifier	35Y4	35Y4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AUDAR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
5A	50	150	CE-LHH-4	PRSA150-50-30	EZ42215C	2N520	DSB-403020-150	TA-220	Filter - Red
B	20	150						"	" - White
C	20	150		PRS150-20		TC45		UT-501	" - "
6	10	25	CE-E-1	PRS25-10	BR102A	TC22	M-10-25	TA-10	Cath. Bypass
7	.05	400	CP-15-9	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.02	400	CP-12-9	484-02	DT4S2	TP423	S-4-02	TC-12	Output Plate Bypass
9	.01	400	CP-11-9	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
10	.01	400	CP-11-9	484-01	DT4S1	TP421	S-4-01	TC-11	" "
11	.001	600	CP-21-9	684-001	LT6D1	TP404	S-6-001	TC-21	Tone Compensation
12	.1	400	CP-01-9	484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
13	.1	400	CP-01-9	484-.1	DT4P1	TP428	S-4-1	TC-1	AVC Filter
14	250	500	CM-325-11	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Audio Plate Bypass
15	250	500	CM-325-11	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	IF Bypass Diode
16	50	500	CM-45-11	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
17	50	500	CM-45-11	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Ext. Ant. Coupling

CONTROLS

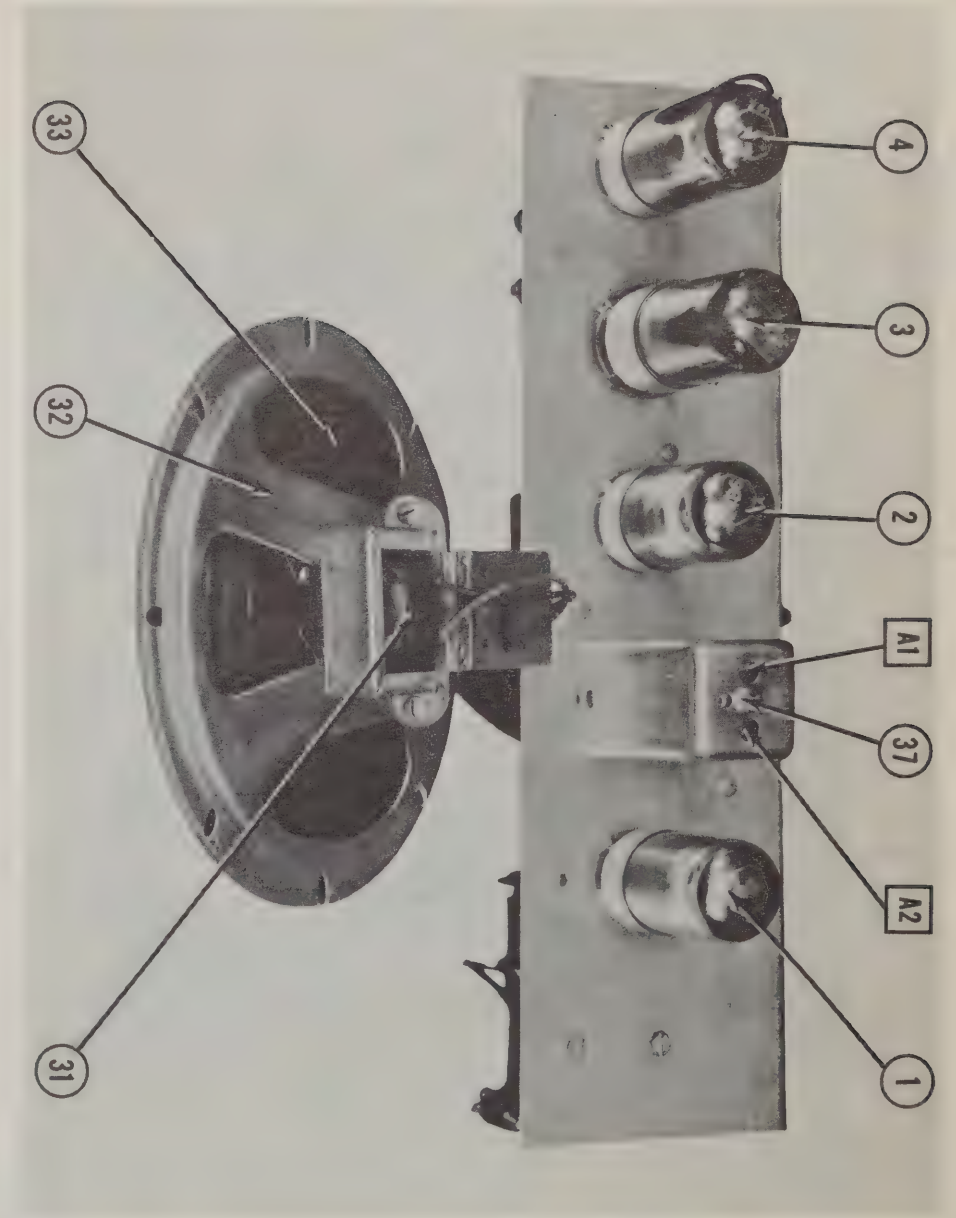
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	AUDAR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
18A	1 Meg.	1	RVC-16-S	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AUDAR PART No.	IRC PART No.	
19	10KΩ	½	RC-103-C	BTS-10K	Br.-Blk.-Or. Oscillator Grid
20	2 Meg.	½	RC-205-C	BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
21	220KΩ	½	RC-224-C	BTS-220K	Red-Red-Yl. Phono Shunt
22	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Series Phono-See Note
23	5 Meg.	½	RC-475-C	BTS-5 Meg.	Grn.-Blk.-Grn. AF Grid
24	220KΩ	½	RC-224-C	BTS-220K	Red-Red-Yl. AF Plate Load
25	470KΩ	½	RC-474-C	BTS-470K	Yl.-Vi.-Yl. Output Grid
26	150Ω	1	RC-151-D	BW-1-150	Br.-Grn.-Br. Output Cathode
27	1000Ω	½	RC-102-C	BTS-1000	Br.-Blk.-Red Filter
28	220Ω	1	RC-221-D	BW-1-220	Red-Red-Br. Filter
29	33Ω	½	RW-330-C	BW-½-33	Or.-Or.-Blk. Rectifier Ballast
30	50Ω	5	RW-50-H	AB-50	Line Dropping

Note-Some models use 2 Meg. in this application. Replacement same as Item #20.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AUDAR PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
31	2100Ω	3.9Ω	340Ω	.6Ω	TOS-20-3	A-3876	T22S45		

SPEAKER

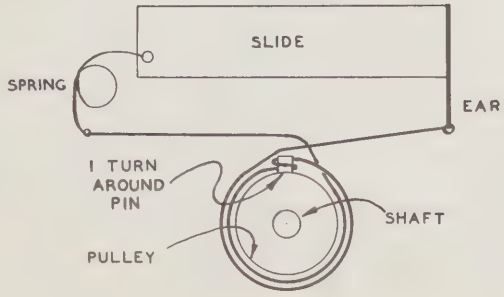
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AUDAR PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-108		
32	PM	3.9Ω	SR-6M	Mod. P6-X		
	CONE DIA.	VC DIA.				
33	6"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AUDAR PART No.	MEISSNER PART No.	
34	Ant. Coil		5Ω			Items 34, 35 & 36 are part of permeability tuner assembly.
35	Osc. Coil		11Ω			
36	Osc. Shunt Coil		8Ω			
37	Input IF	31Ω	31Ω	T1F-1		

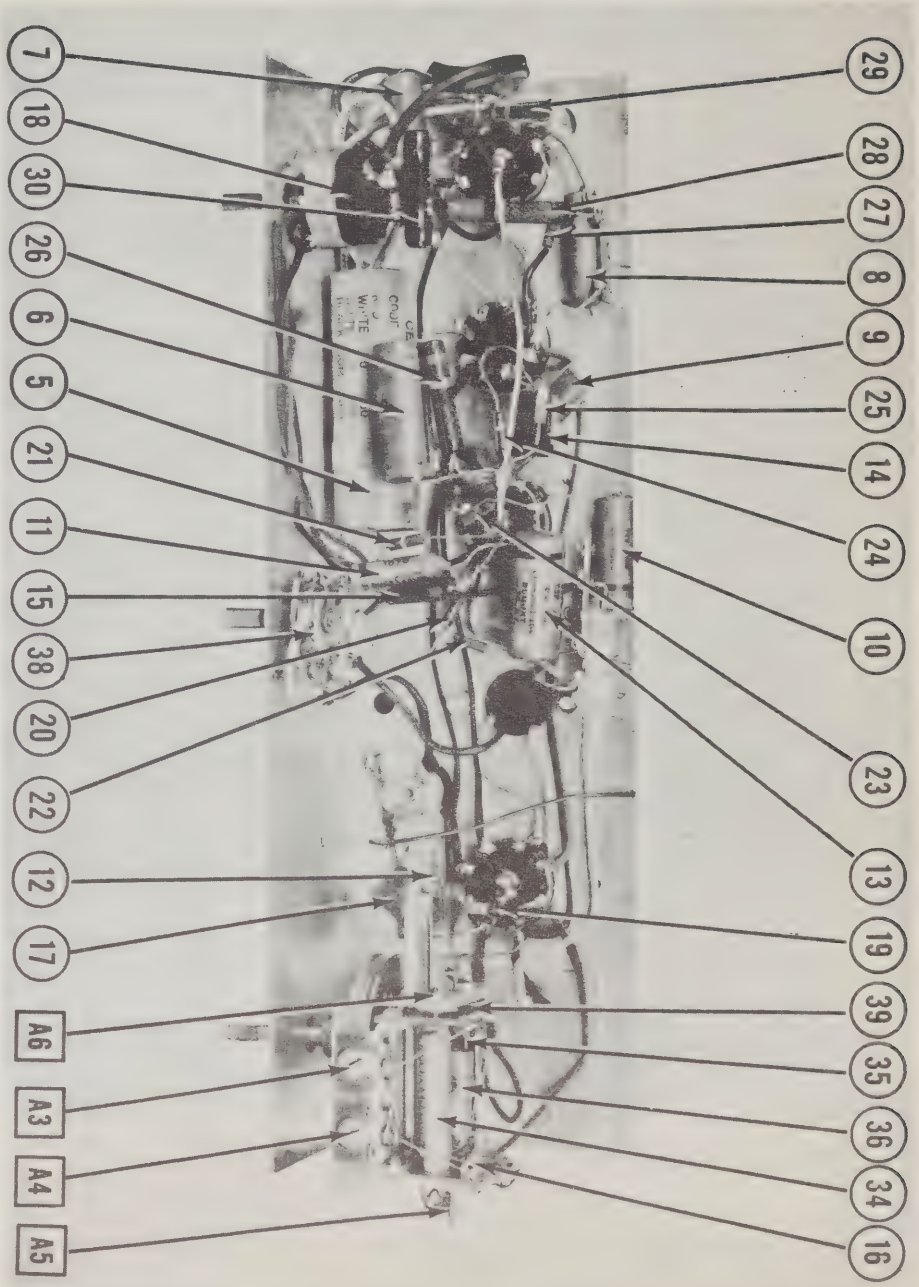
MISCELLANEOUS

ITEM No.	PART NAME	AUDAR PART No.	NOTES
38	Switch		Radio-Phono DPDT
39	Tuner Assembly Crystal Pickup		Astatic Type L-70A

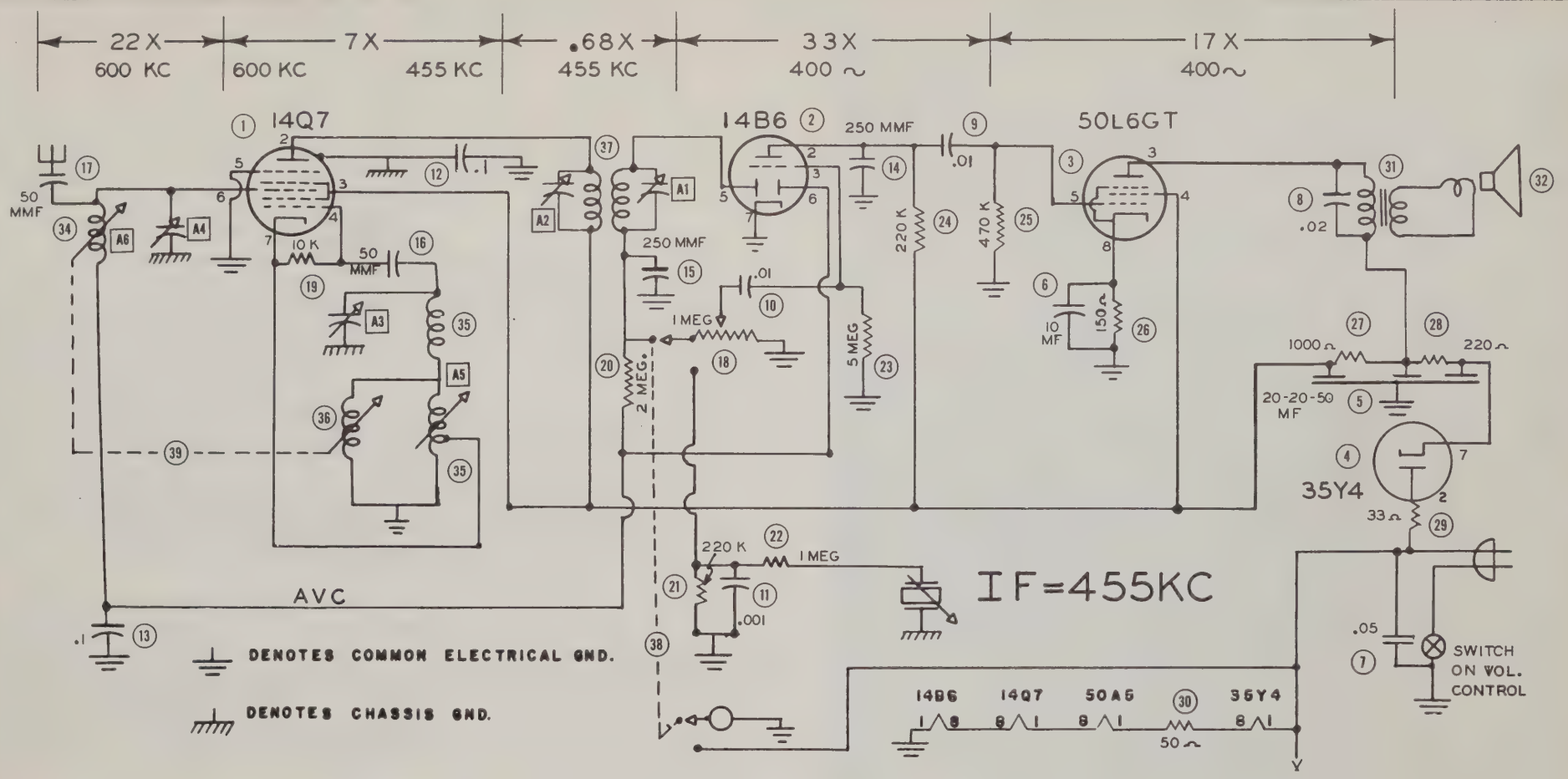


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AUDAR MODEL PR-6A



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	26 V. AC	92 V. DC	93 V. DC	-6.8 V. DC	0 V.	-.8 V. DC	0 V.	13 V. AC
2	14B6	0 V.	72 V. DC	-.7 V. DC	0 V.	-.7 V. DC	-.8 V. DC	0 V.	13 V. AC
3	50L6 GT	0 V.	75 V. AC	97 V. DC	93 V. DC	0 V.	93 V. DC	26 V. AC	5.8 V. DC
4	35Y4	117 V. AC	114 V. AC	110 V. DC	109 V. AC	0 V.	0 V.	122 V. DC	83 V. AC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	23 Ω	300 KΩ	300 KΩ	10 KΩ	0 Ω	2.5 MEG.	1 Ω	12 Ω
2	14B6	0 Ω	500 KΩ	4 MEG.	0 Ω	950 KΩ	2.5 MEG.	0 Ω	12 Ω
3	50L6GT	INF.	65 Ω	300 KΩ	300 KΩ	450 KΩ	300 KΩ	23 Ω	130 Ω
4	35Y4	140 Ω	170 Ω	300 KΩ	135 Ω	INF.	INF.	300 KΩ	110 Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

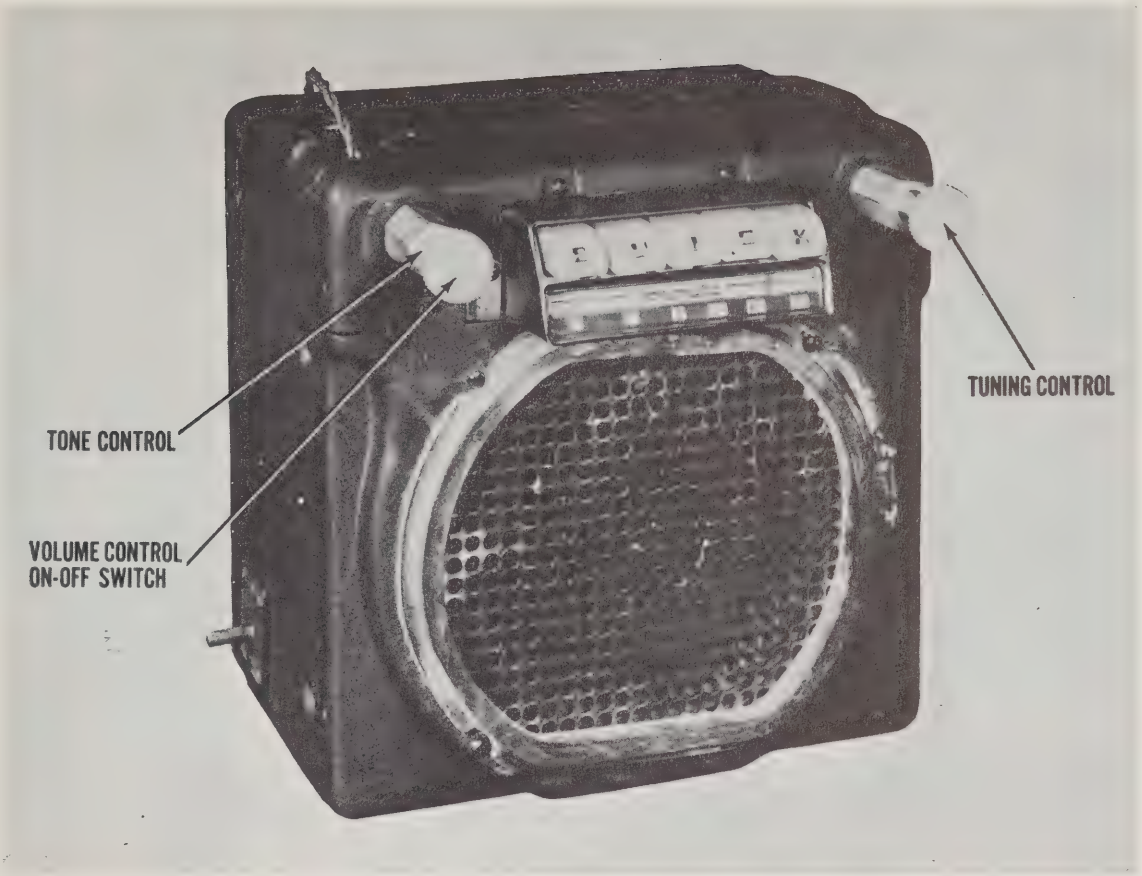
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-4

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

BUICK
MODELS 980744, 980745



BUICK
MODELS 980744, 980745

BUICK MODEL 980745

TRADE NAME	Buick, Models 980744, 980745
SUPPLIER	Buick Motor Div., Gen. Motors Corp., Flint, Mich.
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SR7 Det.-AVC-AF, (2) 6V6GT Power Output.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	550-1600KC RATING 8.0 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, set signal generator to 1300KC. Tune receiver for maximum output. Set pointer at 1300KC reference mark. This should be done only after Step 2. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
After receiver is installed in car adjust A7 for maximum volume on a weak station near 1400KC.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 (grid) 6SA7. Low side to chassis.	262KC	Slugs out completely.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	60 MMFD.	High side to ant. receptacle. Low side to chassis.	1615KC	"	"	A5,A6, A7.	Check to see that the rear end of all three cores are 1-13/16" from the rear of the coil form. Then adjust A5, A6 and A7 for maximum output.
3	60 MMFD.	"	1430KC	"	"	A8,A9.	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		BUICK PART No.	STANDARD REPLACEMENT		
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SR7	6SR7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	" "	6V6GT	6V6GT	7AC	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	BUICK PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7A	20	400	7240612		UP6BJ38	FP234	DY-2x20-450	EL-220	■ Filter
B	20	400							▲ "
8A	20	25	7238553		UP4CJ43	FP306	DY-3x20-25	EL-325	■ Cath. Bypass
B	20	25							▲ "
C	20	25							Bias Filter
9	.5	200	7236621	484-.5	DT4P5	TP431	S-4-5	TC-5	Hash Filter
10A	.015	1500	7236075	1684-015	MD16S15	OT375	TM-16-015		Buffer
B	.015	1500		1684-015	MD16S15	OT375	TM-16-015		"
11	.0015	800	7236134	684-002	DT6D2	TP405	TM-6-002	TC-22	Output Plate Bypass
12	.025	400	1211232	484-025	DT4S25	TP451	TM-6-025	TC-13	Tone Compensation
13	.0025	400	7240578	484-003	DT6D3	TP406	TM-6-003	TC-23	"
14	.2	400	7240579	484-.2	DT4P2	TP429	S-4-2	TC-2	Audio Coupling
15	.005	600	7230912	684-005	DT6D5	TP408	TM-6-005	TC-25	"
16	.01	600	1208600	684-01	DT6S1	TP410	TM-6-01	TC-11	IF Cath. Bypass
17	.1	400	1207908	484-.1	DT4P1	TP428	S-4-1	TC-1	Screen Bypass
18	.05	600	7230592	684-05	DT6S5	TP415	TM-6-05	TC-15	AVC Filter
19	560	500	7240566	1468-0006	5W5T6	MC245	MO.5-35	1FM-35	Hash Filter
20	560	500	7240566	1468-0006	5W5T6	MC245	MO.5-35	1FM-35	" "
21	120	500	7240577	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Tone Compensation
22	220	500	7236105	1468-0002	5W5T2	MC237	MO.5-322	1FM-32	Audio Plate Bypass
23	47	500	7233313	1468-00005	5W5Q5	MC225	MO.5-447	1FM-45	AVC Coupling
24	47	500	7233313	1468-00005	5W5Q5	MC225	MO.5-447	1FM-45	Osc. Grid Capacitor†
25	470	500	7238879				MO.5-347		Fixed Padder
26	56	500	1215188						RF Coupling
27	26	500							Fixed Trimmer *
28	330	500	7232957				MO.5-333		RF Coupling
29	350		7255725						Fixed Trimmer Cer.

†May be 150MMFD in some models.
*Not used in all models.

CONTROLS

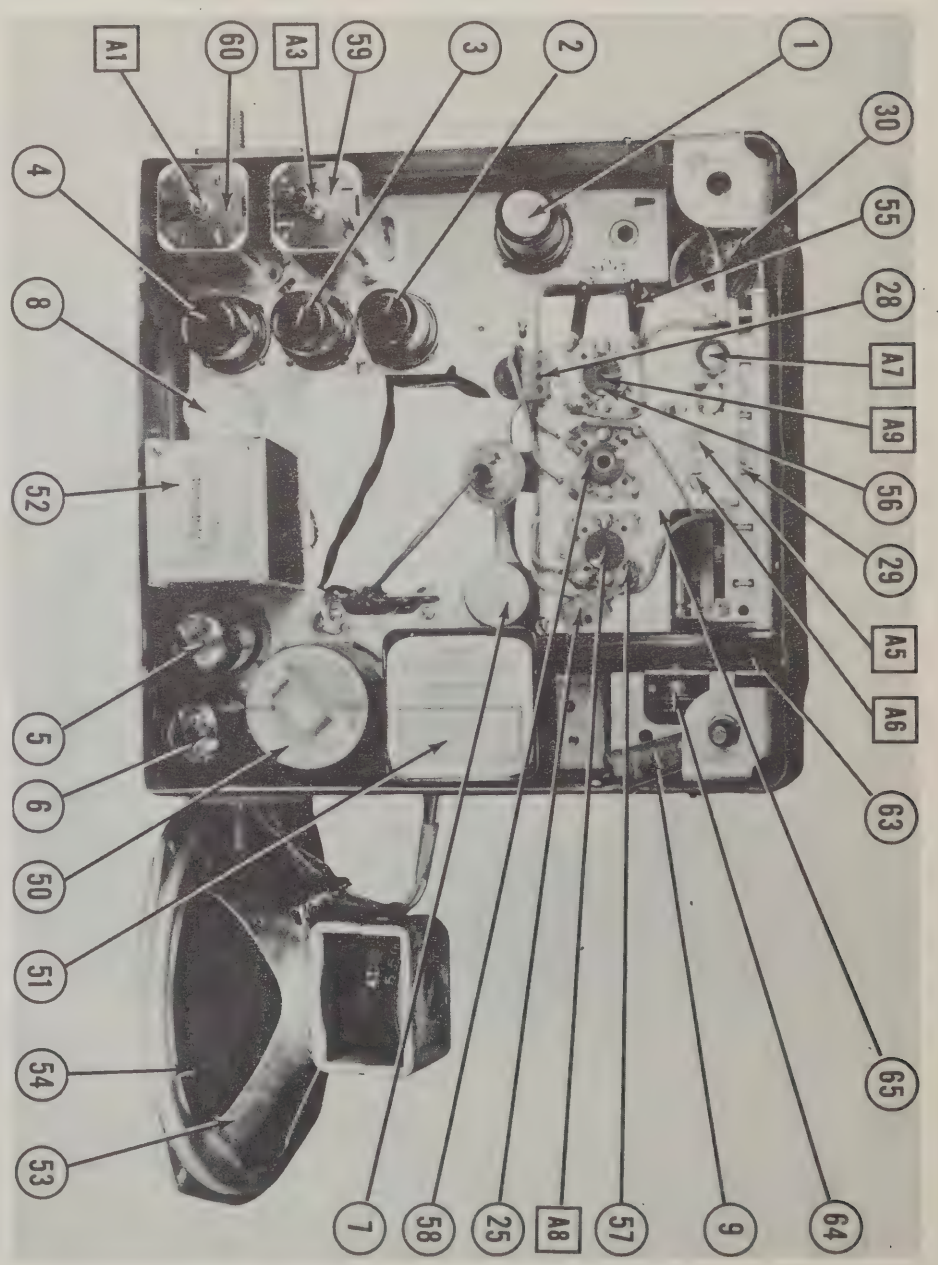
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	BUICK PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
30A	1 Meg.	1	7241928 ♦				Volume Control & Switch-See Note
B	250KΩ	1					Tone Control - See Note
30A	1 Meg.	1	7241967 ♯				Volume Control & Switch-See Note
B	250KΩ	1					Tone Control - See Note

Note-This is a dual control operated by concentric shafts.
♦-Used in Model 980745. ♯-Used in Model 980744

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BUICK PART No.	IRC PART No.	
31	2.2 Meg.	½	1214563	BTS-2.2 Meg.	Red-Red-Grn. RF Grid
32	100Ω	½	1213217	BW-½-100	Br.-Blk.-Br. RF Cathode
33	15KΩ	1	7237595	BTA-15K	Br.-Grn.-Or. RF Plate Load
34	15KΩ	2	7233653	BT-2-15K	Br.-Grn.-Or. Screen Dropping
35	300KΩ	½	1214557	BTS-330K	Or.-Blk.-Yl. Converter Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BUICK PART No.	IRC PART No.	
36	22KΩ	½	1214480	BTS-22K	Red-Red-Or. Oscillator Grid
37	330Ω	½	1213224	BW-½-330	Or.-Or.-Br. IF Cathode
38	1 Meg.	½	1213282	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
39	1 Meg.	½	1213282	BTS-1 Meg.	Br.-Blk.-Grn. AVC Load
40	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. Diode Load
41	330Ω	½	1213224	BW-½-330	Or.-Or.-Br. AF Cathode
42	27KΩ	1	1213342	BTA-27K	Red-Vi.-Or. AF Plate Load
43	68KΩ	½	1213844	BTS-68K	Blue-Gray-Or. Tone Compensation
44	680Ω	½	1214543	BTS-680	Blue-Gray-Br. AF Cathode
45	1500Ω	½	1213237	BTS-1500	Br.-Grn.-Red " "
46	330Ω	2	1214572	BW-2-330	Or.-Or.-Br. Output Cathode
47	1800Ω	2	1214573	BT-2-1800	Br.-Gray-Red Filter
48	100Ω	½	1213217	BW-½-100	Br.-Blk.-Br. Hash Suppression
49	100Ω	½	1213217	BW-½-100	Br.-Blk.-Br. " "

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				BUICK PART No.	MALLORY PART No.	RADIART PART No.	
50	Synchronous	6.3	115∿	7235951	716	5426	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	BUICK PART No.	STANCOR PART No.	THORDARSON PART No.	
51	6.0V DC @ 4.3A	760V CT @ .065A			7240519		T22R22 §	§ Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	BUICK PART No.	STANCOR PART No.	THORDAR'N PART No.		
52A	Matched to P-P Grids	180ΩCT	Part of 7240464				

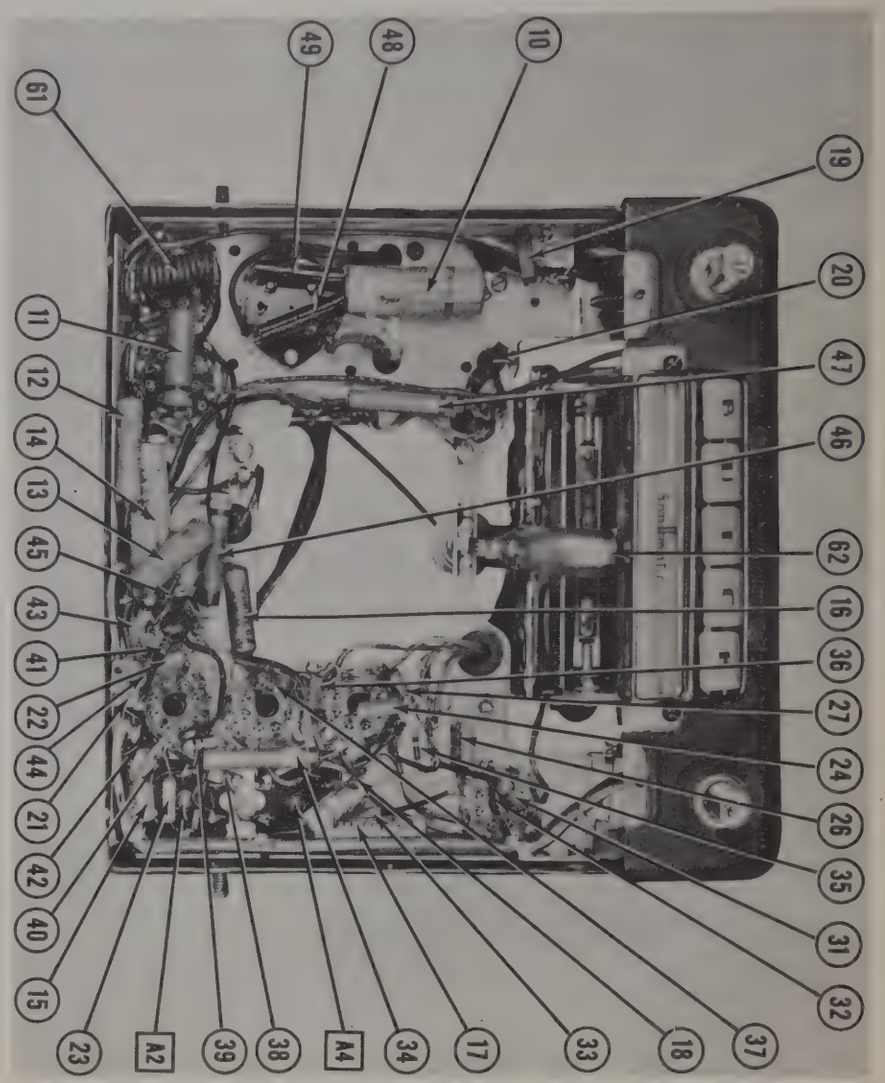
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BUICK PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
52B	9300Ω CT	3.7Ω	380Ω CT	.3Ω	Part of 7240464				

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BUICK PART No.	JENSEN PART No.		
	FIELD RES.	VC IMP.				
53	6.3Ω	3.7Ω	7240469			
	CONE DIA.	VC DIA.				
54	7-3/8"	7/8"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	BUICK PART No.	MEISSNER PART No.	
55	Ant. Choke Coil		17.5Ω	7240251		
56	Ant. Coil Assby.		5Ω	7244056		
57	RF Coil Assy.		4.5Ω	7244057		
58	Osc.Coil "	.7Ω	2.5Ω	7244058		
59	Input IF	32Ω	31Ω	7238546	16-5740	
60	Output IF	30Ω		7240467		
61	"A" Filter Choke		0Ω	7241708		

DIAL LIGHT

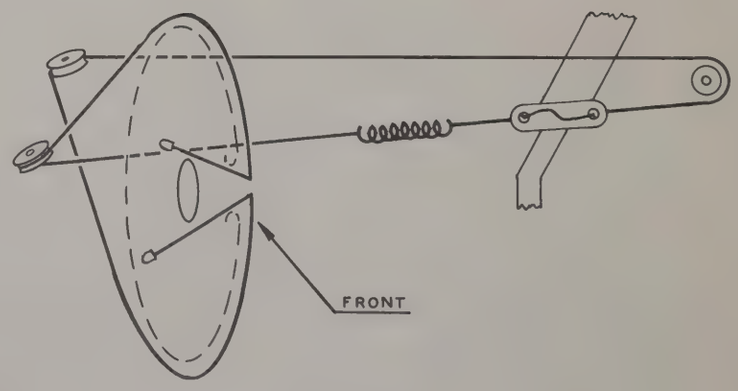
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					BUICK PART No.		
62	Bayonet	6-8	0.40	White	125588		Type 55

MISCELLANEOUS

ITEM No.	PART NAME	BUICK PART No.	NOTES
63	Switch Assby.	7240397	Declutching
64	Clutch "	7240471	Complete
65A	Tuner "	7244052	Complete (Model 980744)
B	" "	7244027	" (" 980745)
	Fuse	120151	AGC 15
	Dial	7242981	Model 980744
	"	7244046	" 980745
A7	Trimmer	7242984	Ant. Trimmer

PUSHBUTTON ADJUSTMENTS

1. Turn receiver on and allow it to warm up for about 15 minutes.
2. Remove button. Shift spring lever on underside of button to opposite side and pull out.
3. Loosen screw. Turn re-set screw which shows when button is removed approximately two turns counter-clockwise.
4. Bottom screws. Push screw all the way in and hold in this position.
5. Tune in desired station manually. Use tuning knob on right of pushbuttons.
6. Release screw and tighten. Now carefully allow reset screw to return to extended position and turn clockwise until tight.
7. Replace button. Place button over re-set screw, push all the way in and release.



DIAL CORD DRIVE

VOLTAGE READINGS

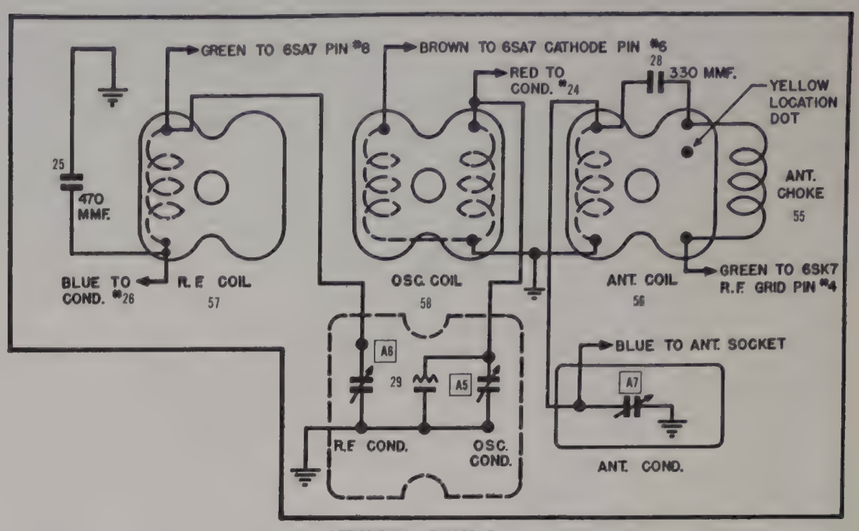
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	0V.	1.1V.DC	80 V.DC	5.9 V.DC	117 V.DC
2	6SA7	0V.	5.9 V.DC	212 V.DC	80 V.DC	7.35V.DC	0V.	0V.	7.05V.DC
3	6SK7	0V.	5.9 V.DC	2.2 V.DC	7.05V.DC	2.2 V.DC	80 V.DC	0V.	212 V.DC
4	6SR7	0V.	.2 V.DC	8.6 V.DC	0V.	3.2 V.DC	117 V.DC	5.9 V.DC	0V.
5	6V6GT	0V.	5.9 V.DC	268 V.DC	228 V.DC	0V.	0V.	0V.	14 V.DC
6	6V6GT	0V.	5.9V.DC	268 V.DC	228 V.DC	0V.	0V.	0V.	14 V.DC

RESISTANCE READINGS

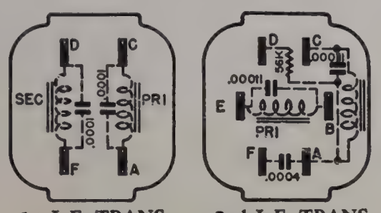
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	4 MEG.	95Ω	230KΩ	∞Ω	225KΩ
2	6SA7	0Ω	∞Ω	210KΩ	230 KΩ	20 KΩ	.5Ω	0Ω	2.2 MEG.
3	6SK7	0Ω	∞Ω	300Ω	2 MEG.	300Ω	230 KΩ	0Ω	210 KΩ
4	6SR7	0Ω	850 KΩ	2200Ω	900 KΩ	260 KΩ	240 KΩ	∞Ω	0Ω
5	6V6GT	INF.	∞Ω	210KΩ	210KΩ	910Ω	INF.	0Ω	300Ω
6	6V6GT	INF.	∞Ω	210 KΩ	210 KΩ	910Ω	INF.	0Ω	300Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6.3 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

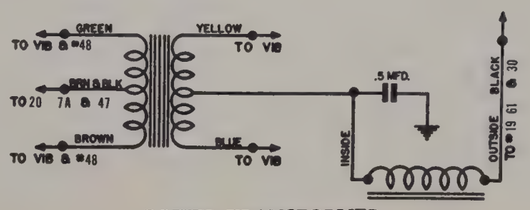


TUNER COILS

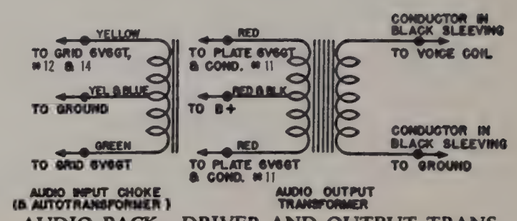


1st I. F. TRANS.
59

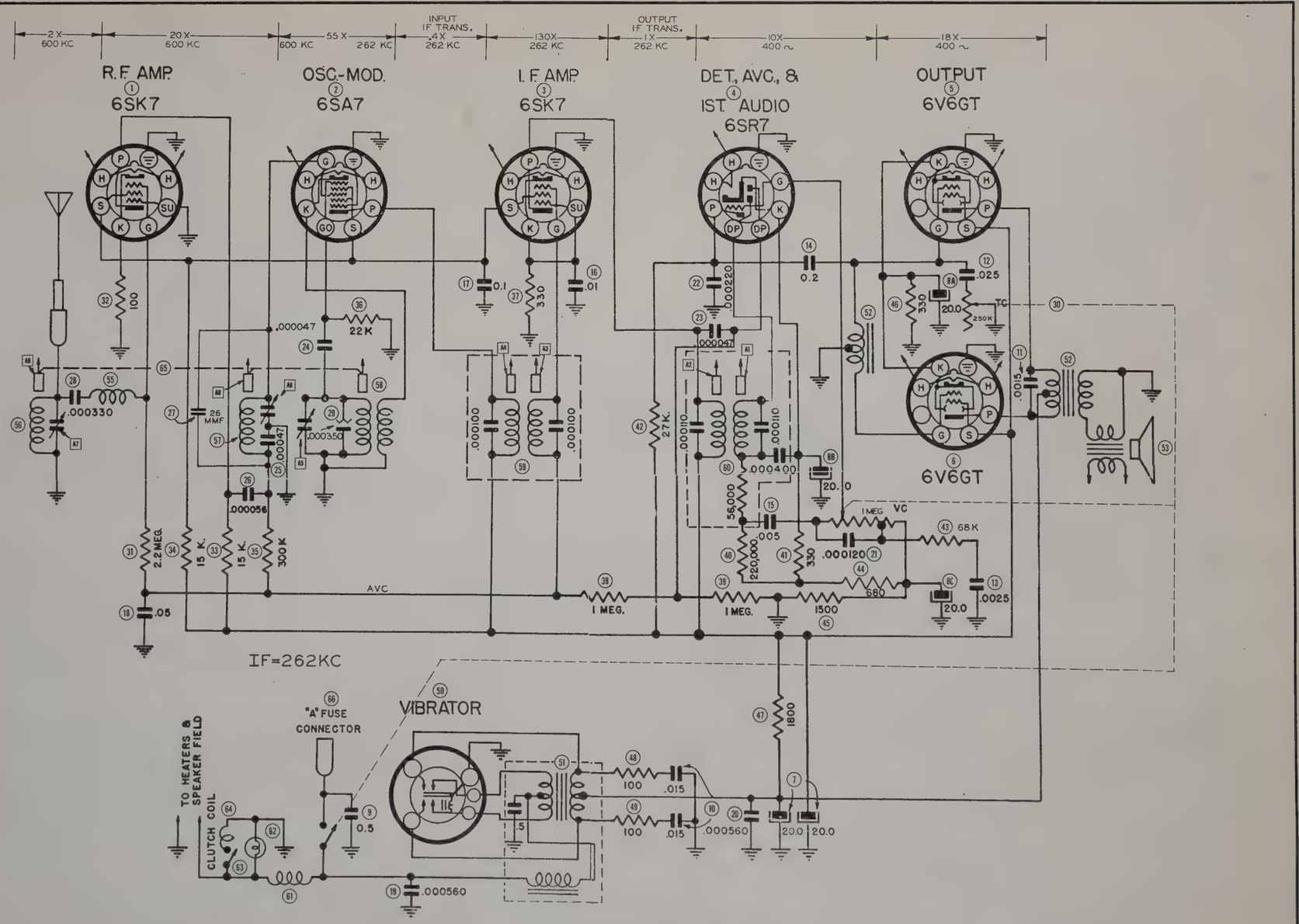
2nd I. F. TRANS.
60



POWER TRANSFORMER
51



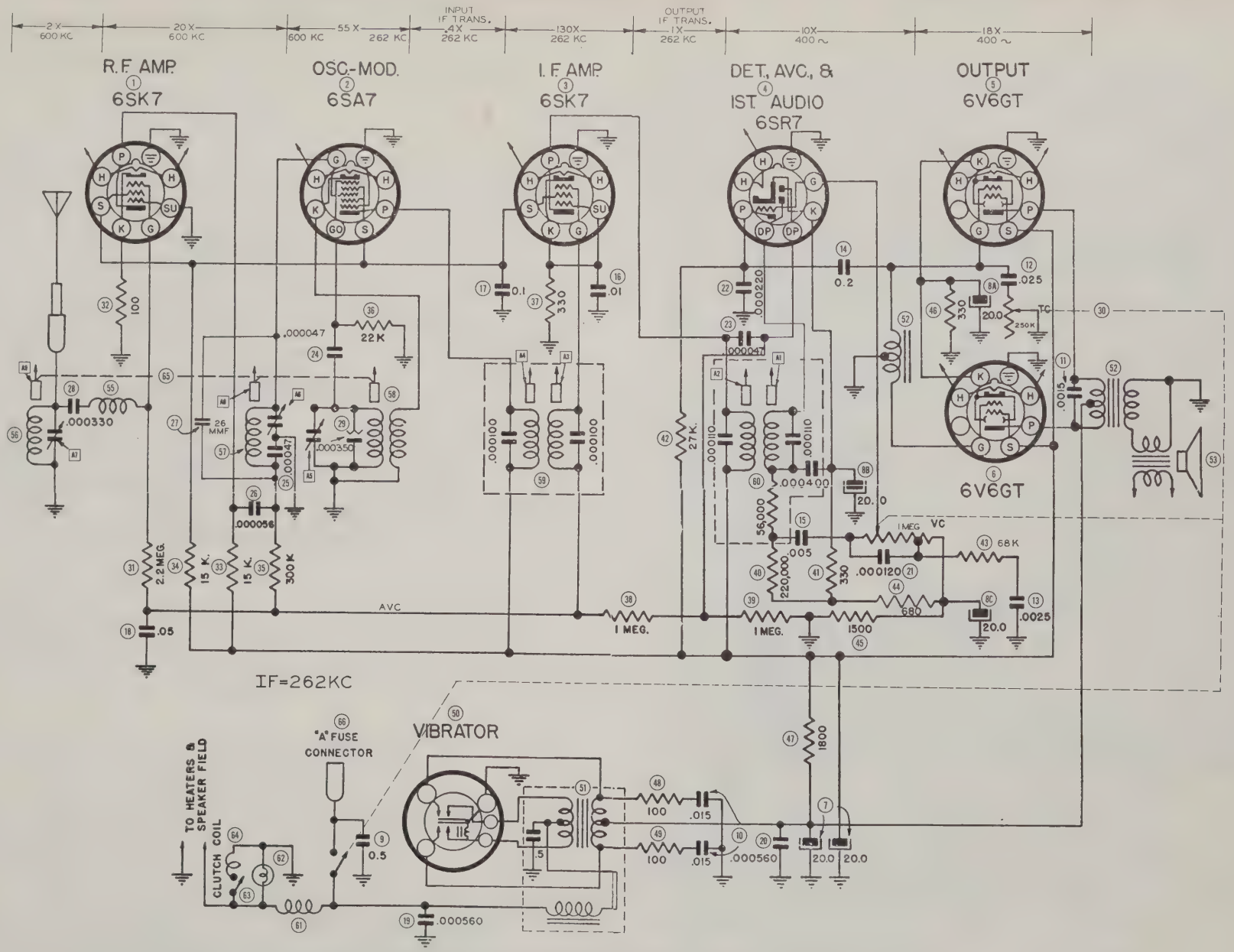
AUDIO PACK - DRIVER AND OUTPUT TRANS.
52



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-5

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-5

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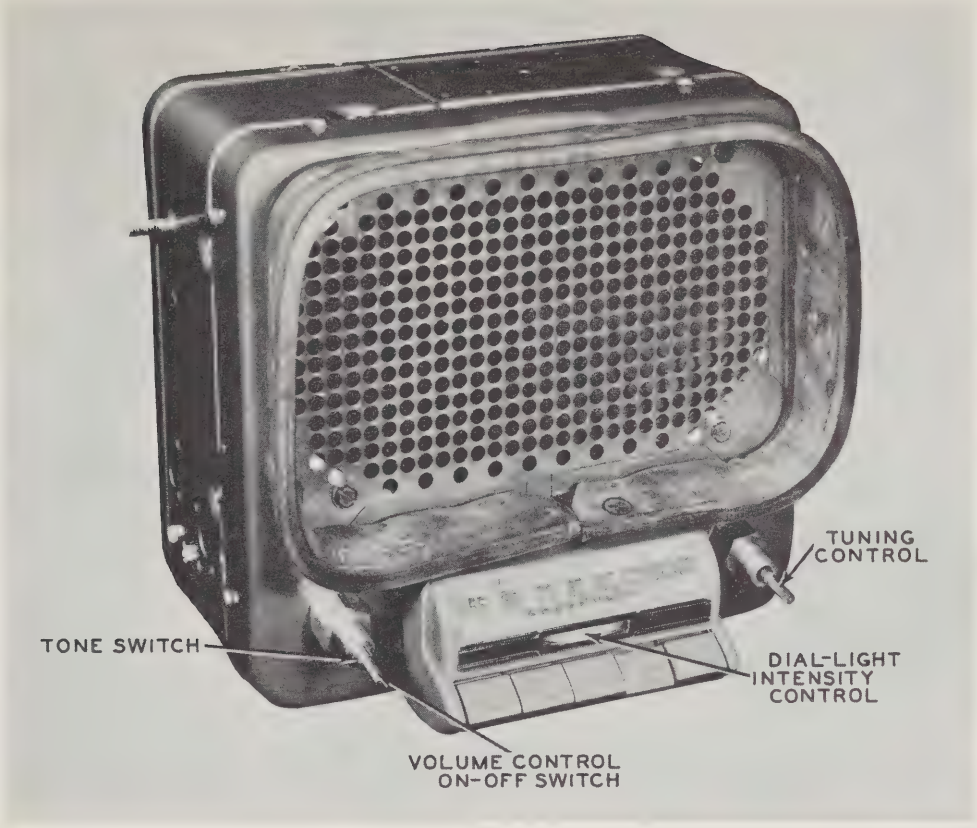
CHEVROLET
MODEL 985793



CHEVROLET
MODEL 985793

CHEVROLET MODEL 985793

TRADE NAME	Chevrolet, Model 985793 (For 1946 & 1947 Chevrolet Autos)
SUPPLIER	Chevrolet Motors Div., Gen. Motors, Detroit 2, Michigan
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne with Pushbutton Tuning
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 0Z4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	550-1600KC RATING 6.6 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, set signal generator to 800KC. Tune receiver to maximum output, and set pointer at 800KC. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. After set is installed readjust A7 on a weak station near 1400KC.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 (grid) 6SA7. Low side to chassis.	262KC	Tuning slugs fully out.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	60 MMFD	High side to ant. receptacle. Low side to chassis.	1615KC	"	"	A5,A6, A7.	Check to see that osc. core extends 11/16" from end of oscillator coil form before adjusting trimmers for maximum output.
3	60 MMFD	"	1400KC	Tune for maximum output.	"	A8,A9.	Adjust for maximum output.
4	60 MMFD	"	1615KC	Slugs completely out.	"	A6,A7	" " " "
5	60 MMFD	"	1400KC	Tune for maximum output.	"	A8,A9	" " " "

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CHEVROLET PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	0Z4	0Z4	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CHEVROLET PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	400	7240724		UP2245C	FP339	DY-312	EL-322	■ Filter
B	20	400							▲ "
C	20	25							Cath. Bypass
8	.006	1600	7240906	1684-006	MD16D6	QW344	TM-16-006	TR-26	Buffer
9	.004	800	7233243	684-004	DT6D4	TP407	TM-6-004	TC-24	Output Plate Bypass
10	.005	600	7230912	684-005	DT6D5	TP408	TM-6-005	TC-25	Tone Compensation
11	.00075	400	7240738						" "
12	.05	600	7230592	684-05	DT6S5	TP415	TM-6-05	TC-15	" "
13	.001	800	1212097	684-001	DT6D1	TP404	TM-6-001	TC-21	Audio Coupling
14	.005	600	7230912	684-005	DT6D5	TP408	TM-6-005	TC-25	"
15	.05	600	7230592	684-05	DT6S5	TP415	TM-6-05	TC-15	AVC Filter
16	.001	800	1212097	684-001	DT6D1	TP404	TM-6-001	TC-21	RF Coupling
17	.05	600	7230592	684-05	DT6S5	TP415	TM-6-05	TC-15	Screen Bypass
18	125		7242523						Fixed Trimmer Cer. †
19	100	500	1210275	1468-001	5W5T1	MC235	MO.5-31	1FM-31	Diode Filter *
20	100	500	1210275	1468-001	5W5T1	MC235	MO.5-31	1FM-31	" " *

†Supplied with tuner assembly.
*Not used in all models.

CONTROLS

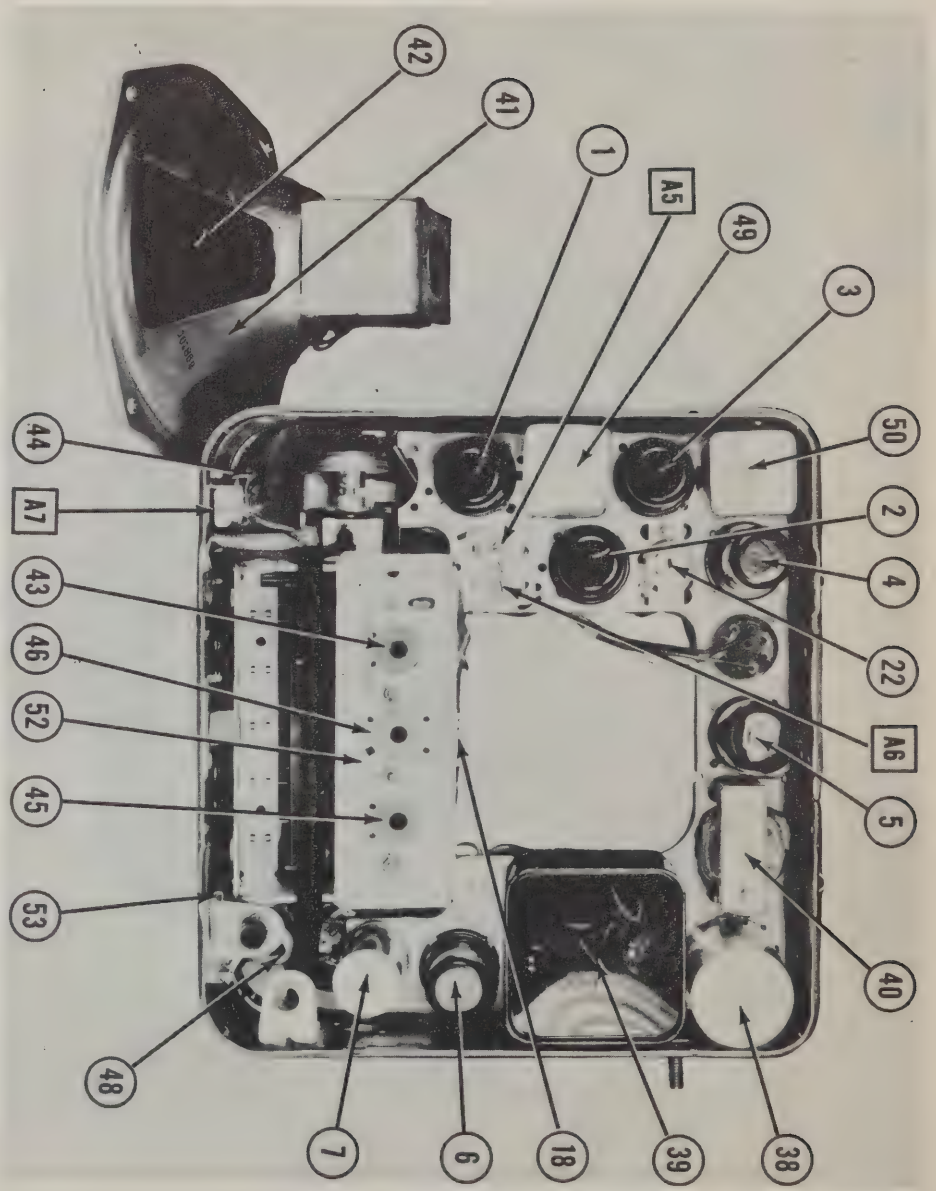
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CHEVROLET PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	250KΩ	1	7242259				Volume Control ‡
B	Switch						Tone Switch ‡
C	Switch						Off-On Switch ‡
22	2000Ω	1	7242204				Sensitivity Control
23	3Ω	1	7242161				Dial Light Intensity Control

‡This is a single unit operated by concentric shafts.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CHEVROLET PART No.	IRC PART No.	IDENTIFICATION CODES
24	100Ω	½	1213217	BW-½-100	Br.-Blk.-Br. RF Cathode
25	10KΩ	1	1211085	BTA-10K	Br.-Blk.-Or. RF Plate Load
26	15KΩ	2	7233653	BT-2-15K	Br.-Grn.-Or. Screen Dropping
27	2.2 Meg.	½	1214563	BTS-2.2 Meg.	Red-Red-Grn. RF Grid
28	330KΩ	½	1214557	BTS-330K	Or.-Or.-Yl. Converter Grid
29	22KΩ	½	1214550	BTS-22K	Red-Red-Or. Oscillator Grid
30	1 Meg.	½	1213282	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
31	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. AF Plate Load
32	15 Meg.	½	1213289	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
33	220KΩ	½	1214555	BTS-220K	Red-Red-Yl. Output Grid
34	390Ω	1	1216149	BW-1-390	Or.-White-Br. Output Cathode
35	2700Ω	2	7242844	BT-2-2700	Red-Vi.-Red Filter
36	5600Ω	1	7240918	BTA-5600	Grn.-Blue-Red Filter
37	220Ω	1	7237994	BW-1-220	Red-Red-Br. Hash Suppression
55	560KΩ	½	1214560	BTS-560K	Grn.-Blue-Yl. Diode RF Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA CHEVROLET PART No.	MALLORY PART No.	RADIART PART No.	INSTALLATION NOTES
38	Interrupter	6.3	115∿	8542	859	5300	Original Part #7239124

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA CHEVROLET PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
39	5.8V DC @ 3.3A	550V CT @ .043A			7255881	P-4061§	T22R20§	§Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CHEVROLET PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
40	5400Ω	3.8Ω	370Ω	.5Ω	7242258	A-3877§	T22S46§		§Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA CHEVROLET PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.				
41	4.1Ω	3.8Ω	7241312			
	CONE DIA.	VC DIA.				
42	6¼"x9-1/8"	7/8"	NOT READILY REPLACEABLE USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CHEVROLET PART No.	MEISSNER PART No.	
43	Ant. Coil Assy		7Ω	7242433		Items 43, 45, & 46 are slug tuned and ganged.
44	Ant. Choke Coil		8Ω	7240251		
45	RF Coil Assy		7Ω	7242433		
46	Osc. Coil "	1Ω	1.5Ω	7242524		
47	"A" Filter Choke		0Ω	7241708		
48	Spark Plate Choke		0Ω	7240797♦		♦Includes spark plate, choke & connector assembly.
49	Input IF	53Ω	52Ω	7242079	16-6652	
50	Output IF	32Ω	34Ω	7242417		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CHEVROLET PART No.		INSTALLATION NOTES
51	Bayonet	6-8	0.40	White	125588		Type 55

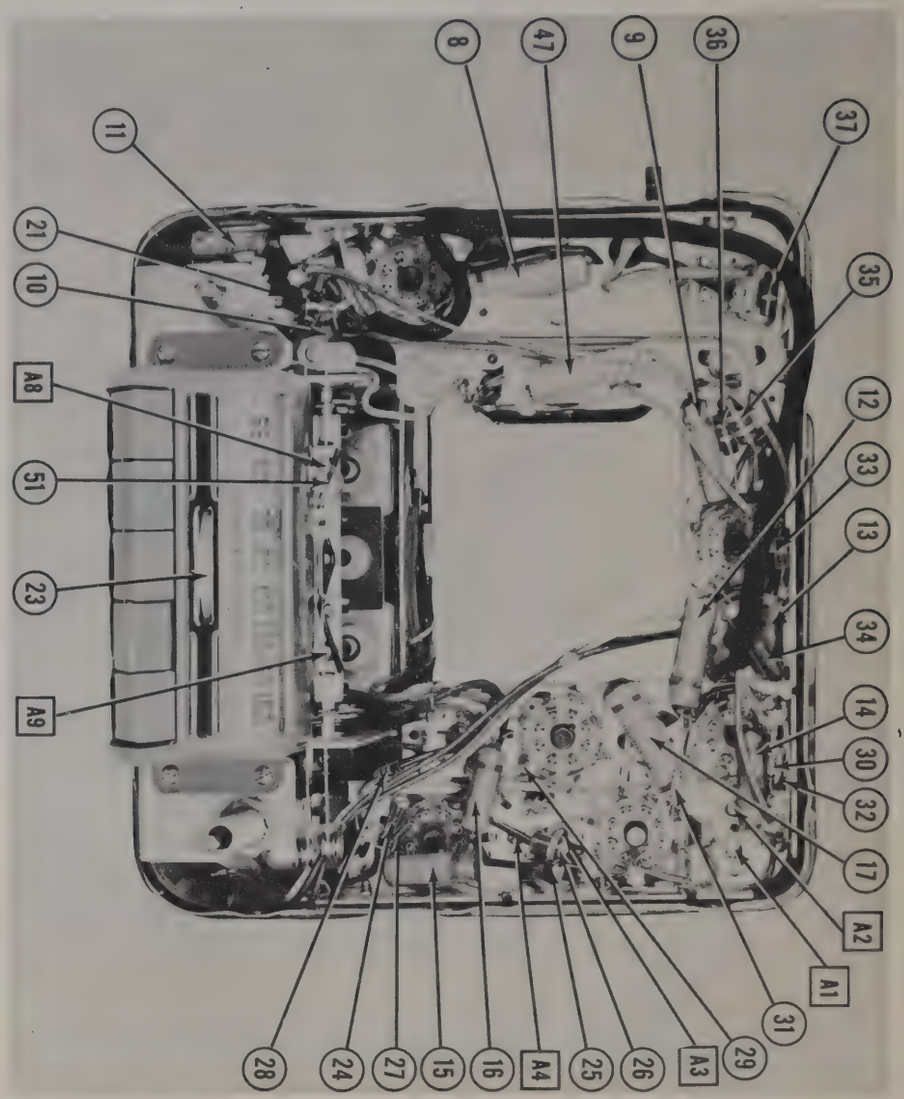
MISCELLANEOUS

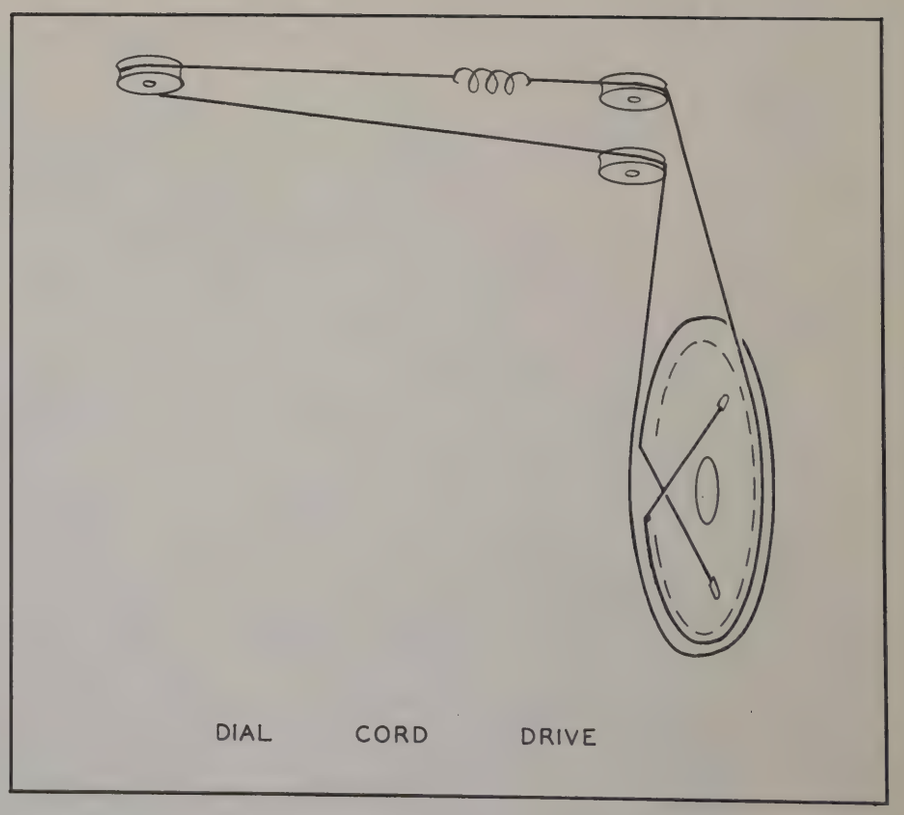
ITEM No.	PART NAME	CHEVROLET PART No.	NOTES
52	Tuner Assembly	7242496	
53	Spark Plate	7242079	
54	Fuse	147685	14 Amp.
A5 }	Dual Trimmer	7242454	{ Osc. Adj.
A6 }			{ RF Adj.
A7	Trimmer	7242013	Ant. Adj.

PUSHBUTTON ADJUSTMENTS

1. Turn set on and allow it to warm up for about 15 minutes.
2. Unlatch 1st button to be set up and loosen knurled knob beneath the button.
3. Tune in station with manual tuning control and push knurled knob in completely. Release knurled knob and tighten firmly.
4. To check accuracy of setting detune with manual tuning control and retune with pushbutton. If setting is off repeat Steps 2, 3 and 4.
5. Relatch the pushbutton.
6. To set up the remaining buttons follow the same procedure as outlined above.

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

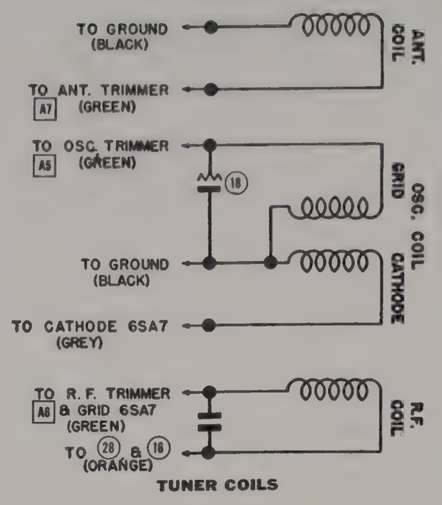
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	-1 V.DC	-6 V.DC	65V.DC	6 V.DC	160V.DC
2	6SA7	0V.	6 V.DC	200V.DC	65 V.DC	-3 V.DC	0V.	0V.	-6 V.DC
3	6SK7	0V.	0V.	0V.	-.6 V.DC	4 V.DC	65 V.DC	6 V.DC	200 V.DC
4	6SQ7	0V.	-.7 V.DC	0V.	-.6 V.DC	-.6 V.DC	110 V.DC	6 V.DC	0V.
5	6V6GT	0V.	6 V.DC	230 V.DC	200 V.DC	0V.	0V.	0V.	9.6 V.DC
6	0Z4	0V.	0V.	240 V.AC	0V.	240 V.DC	0V.	0V.	240 V.DC

RESISTANCE READINGS

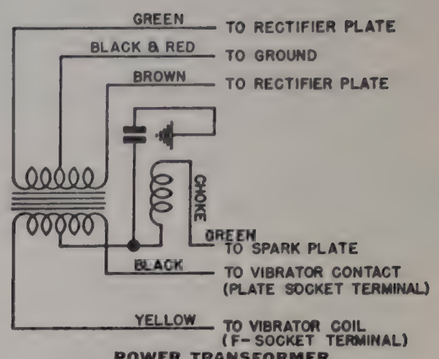
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	3.7 MEG.	85Ω	415Ω	.3Ω	410 KΩ
2	6SA7	0Ω	.3Ω	400KΩ	415 KΩ	20 KΩ	1Ω	0Ω	4.8 MEG.
3	6SK7	0Ω	0Ω	0Ω	4.5 MEG.	4.8 KΩ	415 KΩ	.3Ω	400 KΩ
4	6SQ7	0Ω	12 MEG.	0Ω	750KΩ	4.5 MEG.	620 KΩ	.3Ω	0Ω
5	6V6GT	INF.	.3Ω	400KΩ	400 KΩ	200 KΩ	0Ω	0Ω	350Ω
6	0Z4	0Ω	INF.	290Ω	INF.	260Ω	INF.	INF.	400 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

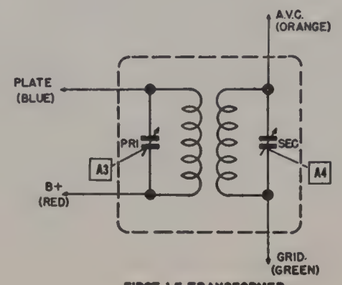
1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



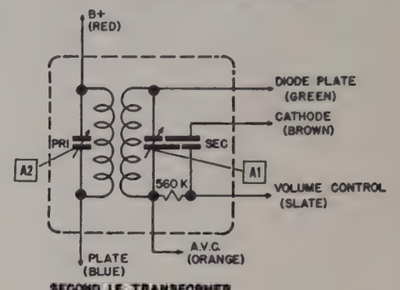
TUNER COILS



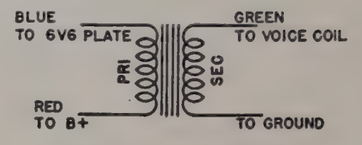
POWER TRANSFORMER



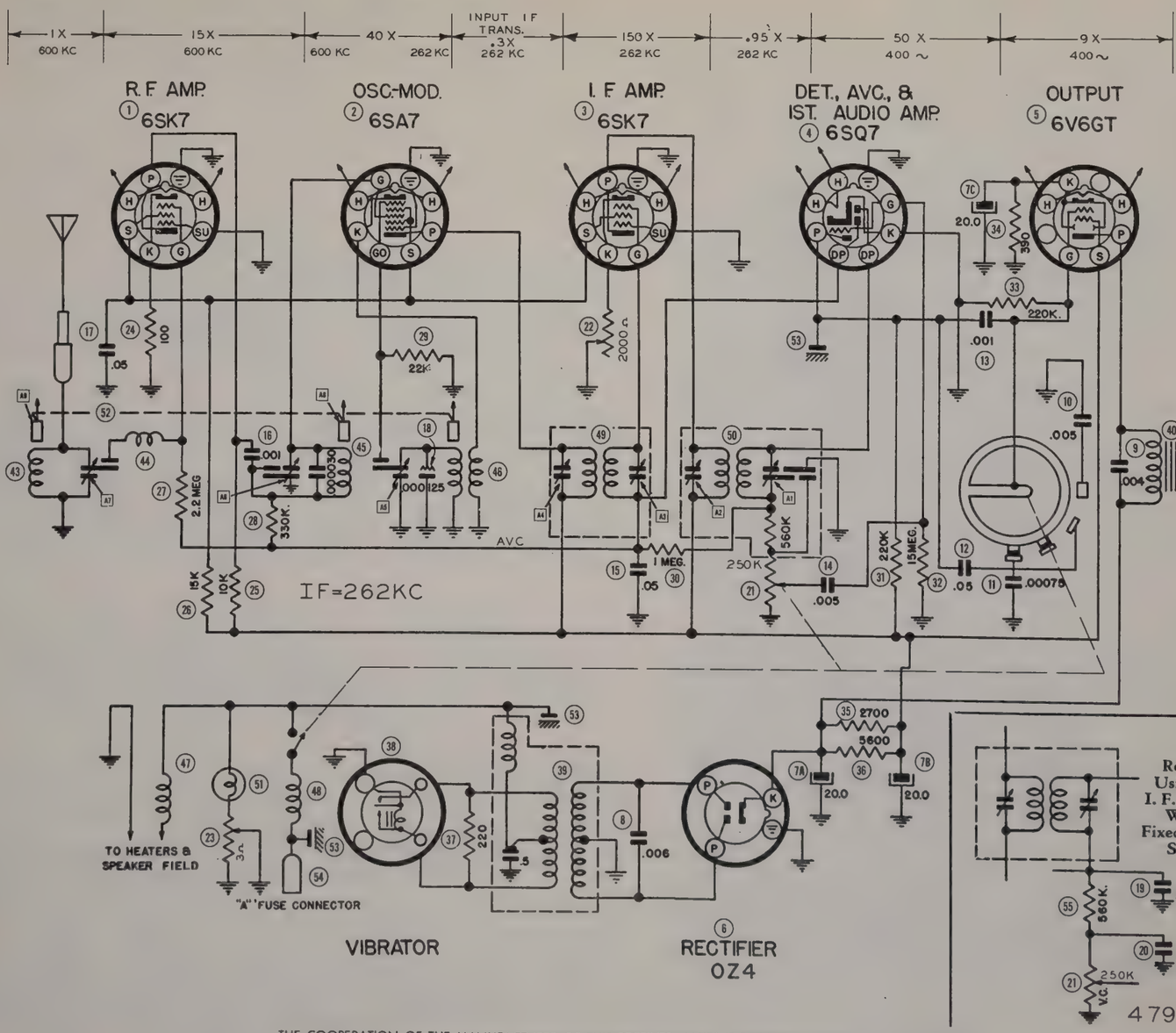
FIRST I.F. TRANSFORMER



SECOND I.F. TRANSFORMER

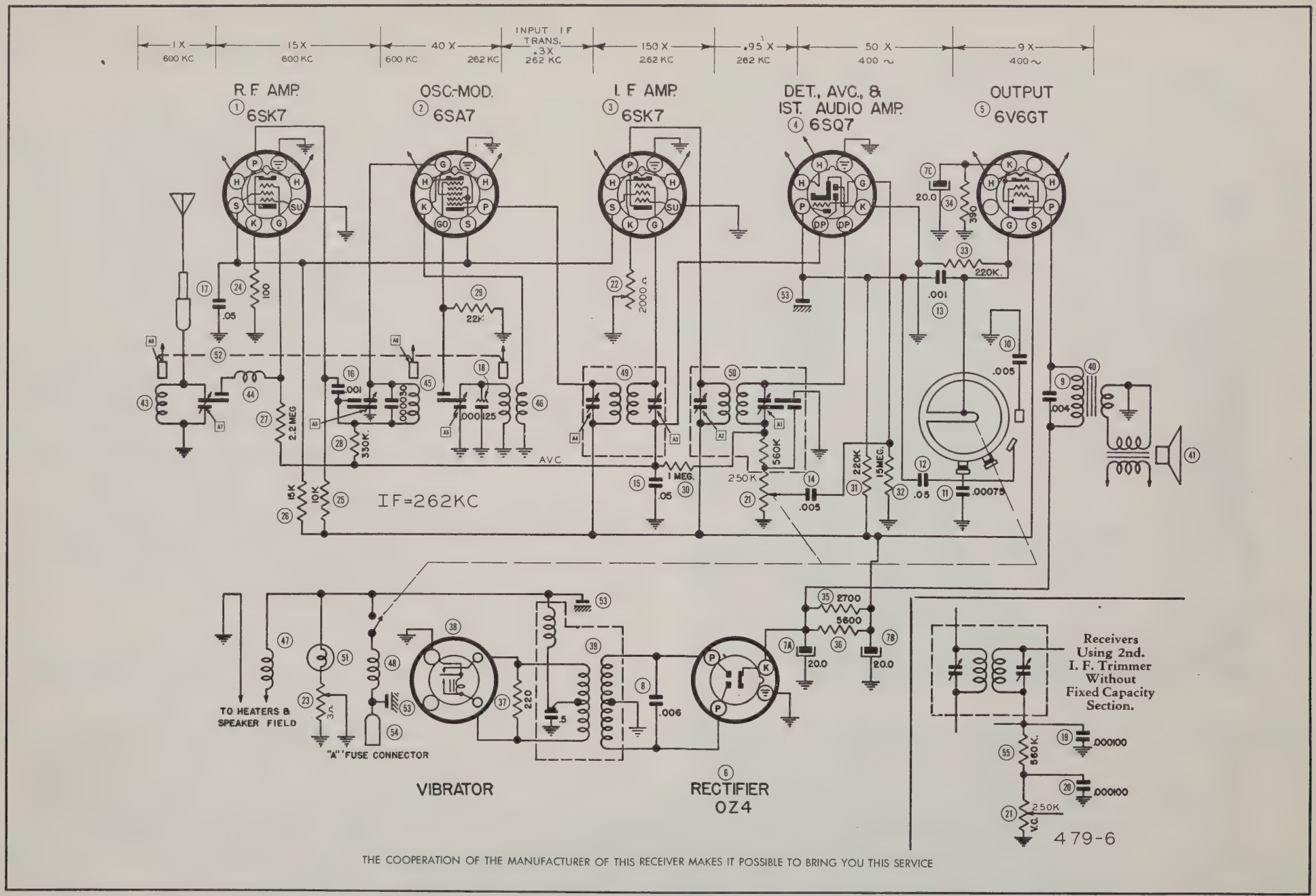


OUTPUT TRANSFORMER



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



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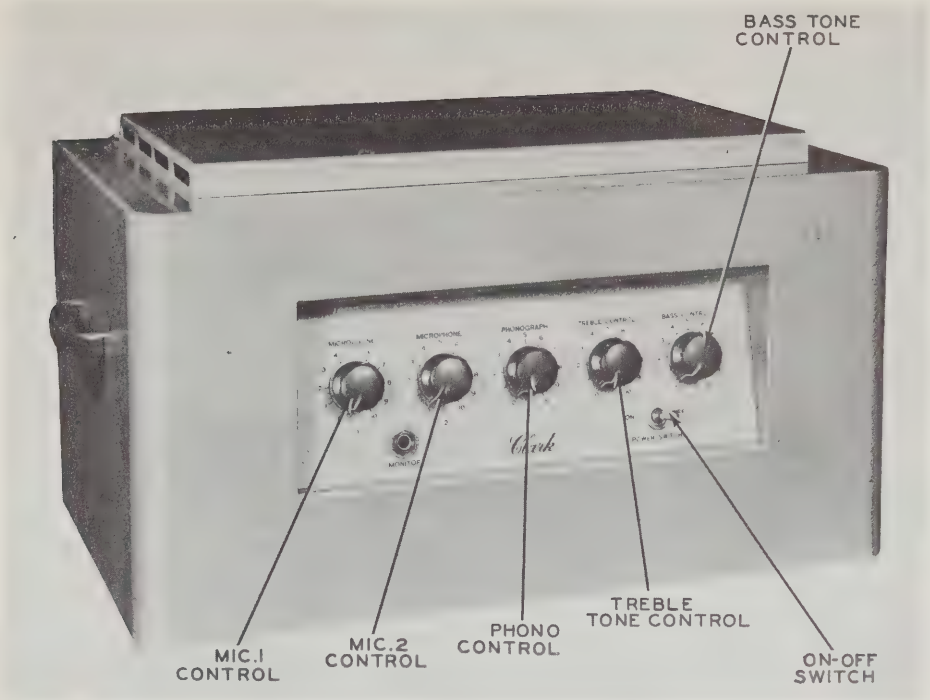

CLARK MODEL PA-30

TRADE NAME	Clark, Model PA-30
MANUFACTURER	Clark, Radio Equip. Corp., 4313 N. Lincoln Ave., Chicago, Ill.
TYPE SET	AC Operated Three Channel Amplifier
TUBES (EIGHT)	Types, 7C7 Mike Amp., 7C7 Mike Amp., 7C7 Mixer-AF Amp., 7F7 Treble-Bass Boost, 7F7 Phase Inverter-AF Amp., (2) 6L6 Power Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING 1.15 Amp. @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7C7	6.4 V.DC	50 V.DC	17 V.DC	.7 V.DC	.7 V.DC	-.05 V.DC	.7 V.DC	0V.
2	7C7	6.4 V.DC	50 V.DC	26 V.DC	.7 V.DC	.7 V.DC	-.05 V.DC	.7 V.DC	13 V.DC
3	7C7	13 V.DC	30 V.DC	30 V.DC	.85 V.DC	.85 V.DC	0V.	.85 V.DC	19 V.DC
4	7F7	3.2 V.AC	1.4 V.DC	143 V.DC	0V.	0V.	86 V.DC	1.4 V.DC	3.2 V.AC
5	7F7	3.2 V.AC	1.6 V.DC	132 V.DC	0V.	0V.	127 V.DC	1.6 V.DC	3.2 V.AC
6	6L6	0V.	3.2 V.AC	400 V.DC	340 V.DC	0V.	0V.	3.2 V.AC	25 V.DC
7	6L6	0V.	3.2 V.AC	400 V.DC	340 V.DC	0V.	0V.	3.2 V.AC	25 V.DC
8	5U4G	0V.	412 V.DC	0V.	360 V.AC	0V.	360 V.AC	0V.	412 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7C7	7 Ω	310 KΩ	1.2 MEG.	500 Ω	500 Ω	1.3 MEG.	500 Ω	0 Ω
2	7C7	7 Ω	310 KΩ	1.2 MEG.	500 Ω	500 Ω	1 MEG.	500 Ω	15 Ω
3	7C7	15 Ω	260 KΩ	260 KΩ	950 Ω	950 Ω	340 KΩ	950 Ω	22 Ω
4	7F7	0 Ω	850 Ω	130 KΩ	300 KΩ	275 KΩ	530 KΩ	850 Ω	0 Ω
5	7F7	0 Ω	975 Ω	230 KΩ	470 KΩ	310 KΩ	240 KΩ	975 Ω	0 Ω
6	6L6	0 Ω	0 Ω	18 KΩ	18 KΩ	420 KΩ	INF.	0 Ω	64 Ω
7	6L6	0 Ω	0 Ω	18 KΩ	18 KΩ	420 KΩ	INF.	0 Ω	64 Ω
8	5U4G	INF.	18 KΩ	INF.	46 Ω	INF.	42 Ω	INF.	18 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

CLARK MODEL TA-30

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CLARK PART No.	STANDARD REPLACEMENT		
1	Mic. 1 Amp.		7C7	8V	
2	Mic. 2 Amp.		7C7	8V	
3	Mixer-AF Amp.		7C7	8V	
4	Treble-Bass Boost		7F7	8AC	
5	Phase Inv.-AF Amp.		7F7	8AC	
6	Power Output		6L6	7AC	
7	"		6L6	7AC	
8	Rectifier		5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

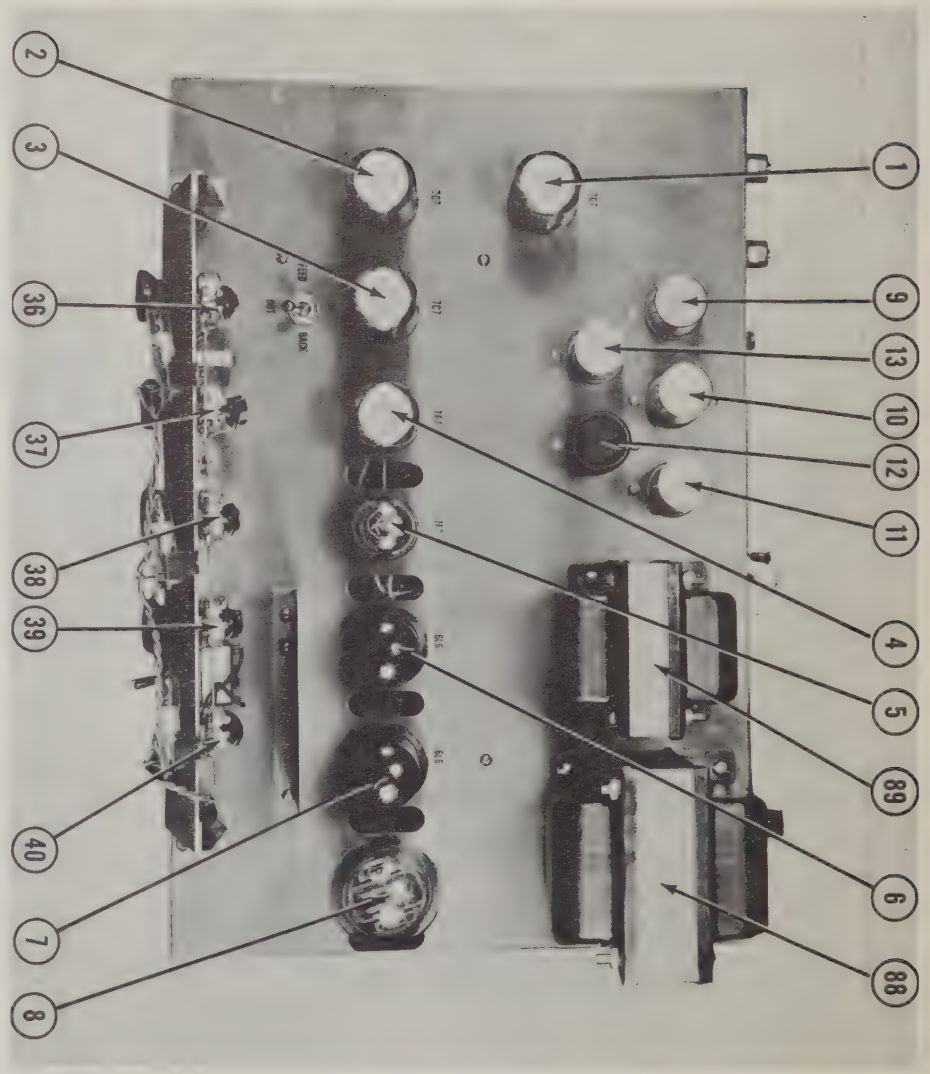
ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CLARK PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
9	30	450		AF6J	UP4045	FP145	DY-30-450	EL-3	Filter
10A	40	400		AF8J	UP4045C	FP339†	DY-312†	EL-350†	■ Filter
B	20	25		PRS25-25					▲ Cath. Bypass
11A	20	350		AF44J4A	UP6CJ17	FP330	DY-312	EL-312	■ Filter
B	10	300							▲ "
C	20	25							Cath. Bypass
12A	20	350		AF44J4A	UP6CJ17	FP330	DY-312	EL-312	■ Filter
B	10	300							▲ "
C	20	25							Cath. Bypass
13A	20	150		AF44D	UP2215	FP211	DY-2x20-150	EL-221	■ " "
B	20	25							▲ " "
14	.005	400		484-005	DT6D5	TP408	S-6-005	TC-25	Feedback
15	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Audio Coupling
16	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
17	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
18	.002	400		484-002	DT6D2	TP405	S-6-002	TC-22	" "
19	.005	400		484-005	DT6D5	TP408	S-6-005	TC-25	" "
20	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Tone Compensation
21	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
22	.005	400		484-005	DT6D5	TP408	S-6-005	TC-25	" "
23	.005	400		484-005	DT6D5	TP408	S-6-005	TC-25	" "
24	.005	400		484-005	DT6D5	TP408	S-6-005	TC-25	" "
25	.002	400		484-002	DT6D2	TP405	S-6-002	TC-22	" "
26	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Audio Coupling
27	.002	400		484-002	DT6D2	TP405	S-6-002	TC-22	Feedback
28	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Audio Coupling
29	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
30	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Mic. Amp. Screen Bypass
31	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	" " " "
32	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Tone Compensation
33	500	500		1468-0005	5W5T5	MC245	MO.5-35	1FM-35	" "
34	500	500		1468-0005	5W5T5	MC245	MO.5-35	1FM-35	" "
35	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	" "

†Parallel sections to obtain 40 MFD.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CLARK PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
36A	500KΩ	1		MR48	D13-133	M-60-Z	Mike 1 Control
B	Shaft			Not Req.	A	Not Req.	Attach to 36A per instructions
37A	500KΩ	1		MR48	D13-133	M-60-Z	Mike 2 Control
B	Shaft			Not Req	A	Not Req.	Attach to 37A per instructions
38A	500KΩ	1		MR48	D13-133	M-60-Z	Phono Control
B	Shaft			Not Req.	A	Not Req.	Attach to 38A per instructions
39A	500KΩ	1		MR48	D13-133	M-60-Z	Treble Control
B	Shaft			Not Req.	A	Not Req.	Attach to 39A per instructions
40A	500KΩ	1		MR48	D13-133	M-60-Z	Bass Control
B	Shaft			Not Req.	A	Not Req.	Attach to 40A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CLARK PART No.	IRC PART No.	
41	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 1st Mic. Amp. Grid
42	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 2nd Mic. Amp. Grid
43	560Ω	½		BTS-560	Grn.-Blue-Br. Mic. Amp. Cathode
44	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 1st Mic. Amp. Screen Dropping
45	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. 2nd Mic. Amp. Screen Dropping
46	220KΩ	½		BTS-220K	Red-Red-Yl. 1st Mic. Amp. Plate Load
47	220KΩ	½		BTS-220K	Red-Red-Yl. 2nd Mic. Amp. Plate Load
48	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Isolation
49	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Isolation
50	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Isolation
51	510KΩ	½		BTS-470K	Gm.-Br.-Yl. AF Grid-See Note 1
52	1000Ω	½		BTS-1000	Br.-Blk.-Red AF Cathode
53	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
54	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Tone Compensation
55	50KΩ	½		BTS-47K	Grn.-Blk.-Or. Filter
56	10KΩ	½		BTS-10K	Br.-Blk.-Or. "
57	10KΩ	2		BT-2-10K	Br.-Blk.-Or. "
58	5KΩ	2		BT-2-4700	Grn.-Blk.-Red "
59	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Tone Compensation
60	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
61	220KΩ	½		BTS-220K	Red-Red-Yl. " "
62	220KΩ	½		BTS-220K	Red-Red-Yl. " "
63	50KΩ	½		BTS-47K	Grn.-Blk.-Yl. " "
64	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Gm. " "
65	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. " "
66	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
67	220KΩ	½		BTS-220K	Red-Red-Yl. " "
68	50KΩ	½		BTS-47K	Grn.-Blk.-Or. " "
69	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
70	10KΩ	½		BTS-10K	Br.-Blk.-Or. " "
71	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
72	1000Ω	½		BTS-1000	Br.-Blk.-Red Tone Amp. Cathode
73	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Treble Amp. Plate Load
74	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Bass Amp. Plate Load
75	220KΩ	½		BTS-220K	Red-Red-Yl. Driver Grid
76	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Driver Grid-See Note 2
77	220KΩ	½		BTS-220K	Red-Red-Yl. Driver Plate Load
78	220KΩ	½		BTS-220K	Red-Red-Yl. Phase Inverter Plate Load
79	510KΩ	½		BTS-470K	Gm.-Br.-Yl. Phase Inverter Grid
80	1000Ω	½		BTS-1000	Br.-Blk.-Red Driver Cathode
81	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
82	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
83	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
84	220KΩ	½		BTS-220K	Red-Red-Yl. Feedback
85	51Ω	2		BW-2-47	Grn.-Br.-Blk. Output Cathode
86	2500Ω	10		AB-2500	Filter
87	20KΩ	10		AB-20K	Bleeder

Note 1-Not used in all models.
Note 2-Some models use 510KΩ in this application.

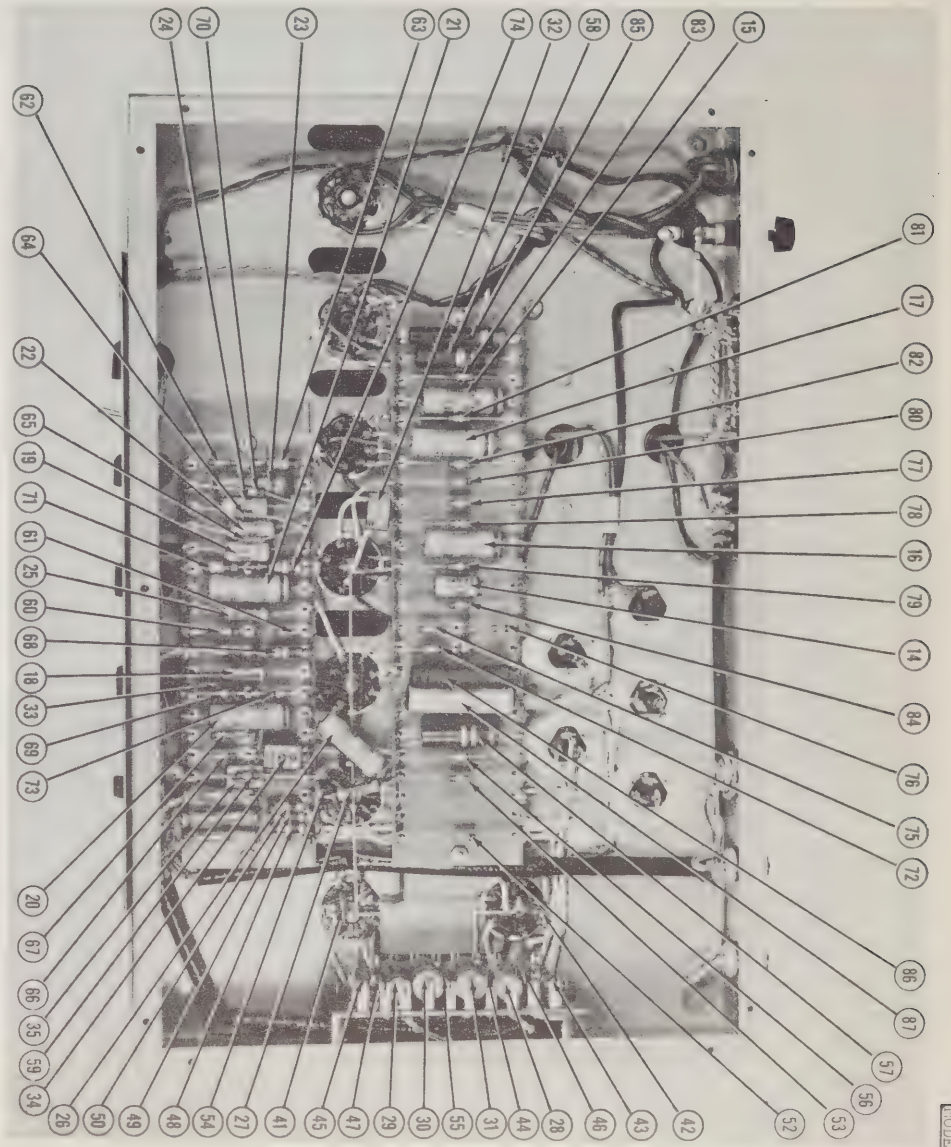
TRANSFORMER (POWER)

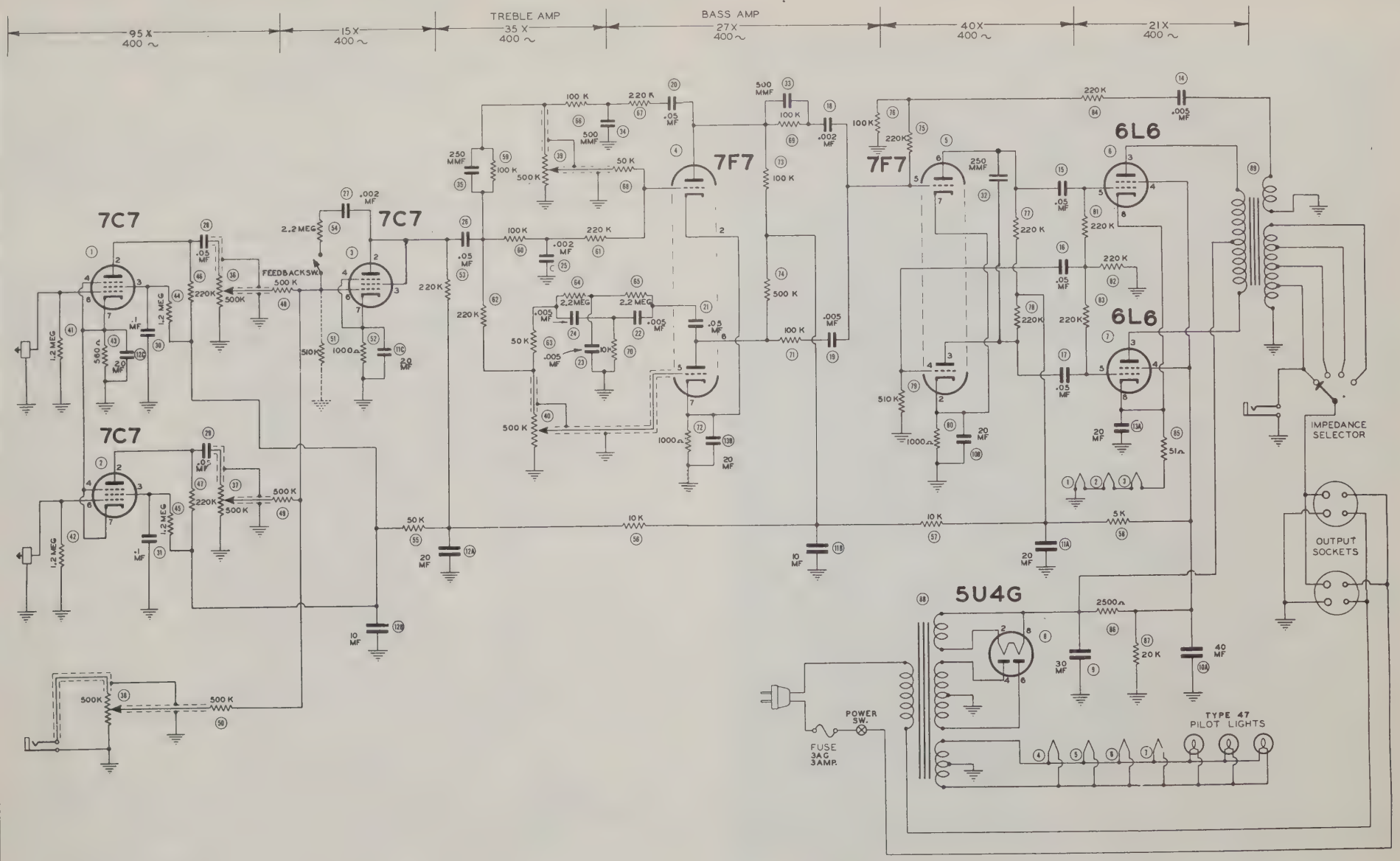
ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	CLARK PART No.	STANCOR PART No.	THORDARSON PART No.	
88	117V AC	720V CT @ .16A	5.0V AC @ 3.0A	6.4V AC @ 2.9A		P-6314*	T22R33†	*Use universal mounting brackets. †Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CLARK PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
89	8900Ω CT	4Ω 8Ω 15Ω 500Ω	150Ω CT	.25Ω .35Ω .5Ω 18Ω					Tertiary winding 1.2Ω.

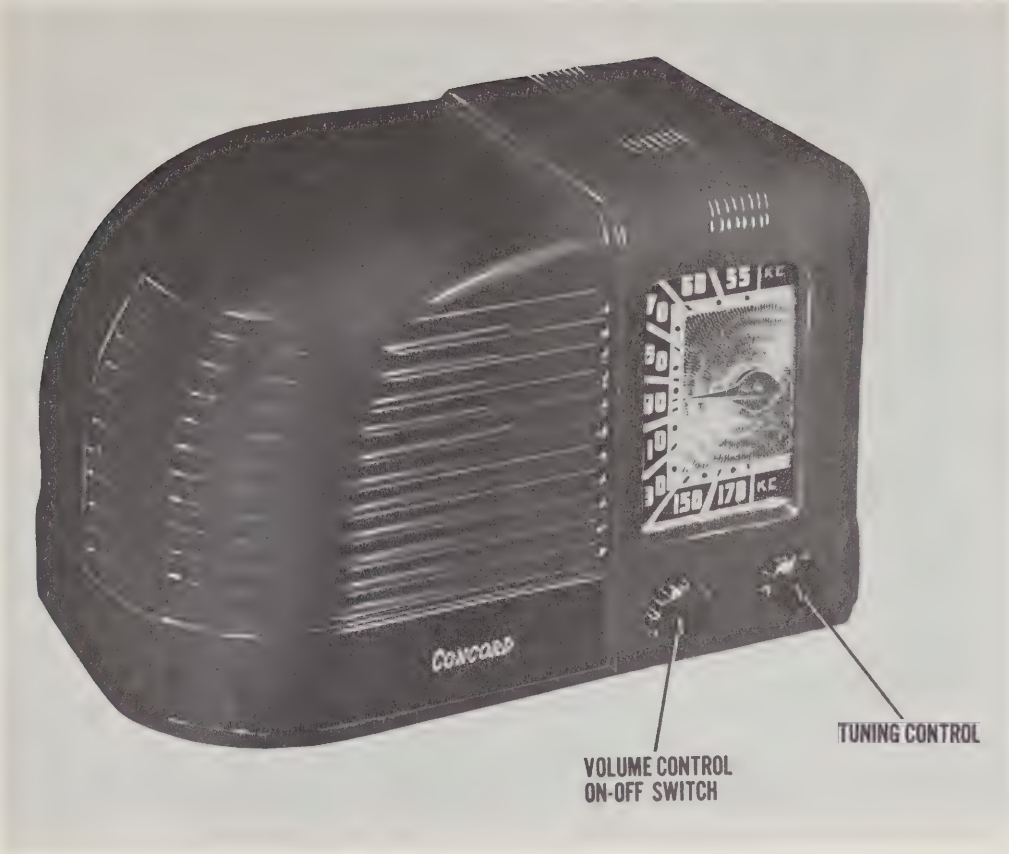
CHASSIS—BOTTOM VIEW





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

CONCORD
MODEL 6C51B



CONCORD
MODEL 6C51B

CONCORD MODEL 6C51B

TRADE NAME	Concord, Models 6C51B, 6C51W
SUPPLIER	Concord Radio Corp., 901 W. Jackson Blvd., Chicago, Ill.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and chassis. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	456KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	10 MMFD	High side to ext ant. clip. Low side to ext. ground clip.	1700KC	1700KC	"	A5	Adjust for maximum output.
3	10 MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

CONCORD MODEL 6CR1B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CONCORD PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CONCORD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	40	150		PRSA150-40-40	BRD4415	2N511	M-2x40-150	TA-440	Filter - Red
B	40	150							" "
7	.05	400	16-224	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Output Plate Bypass
9	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
11	.05	400	16-224	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
12	500	500	17-120	1468-0005	5W5T5	MC245	MO.5-35	1FM-35	Audio Plate Bypass
13	250	500	17-115	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	IF Bypass Vol. Cont.
14	50	500	17-109	1468-00005	5W505	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CONCORD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
15A	1 Meg.	1	26Y3	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

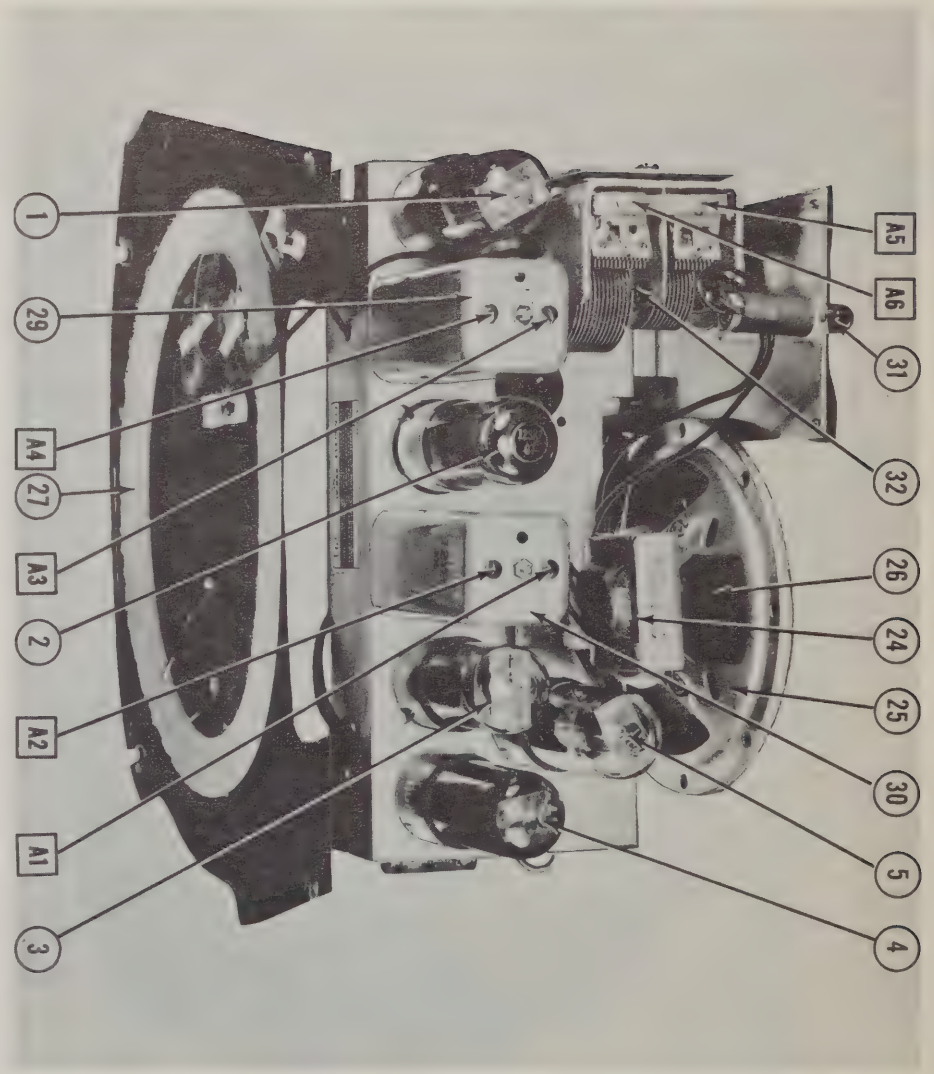
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CONCORD PART No.	IRC PART No.	
16	20KΩ	½		BTS-22K	Red-Blk.-Or. Oscillator Grid
17	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Network
18	12 Meg.	½		BTS-12 Meg.	Br.-Red-Blue AF Grid-See Note
19	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
20	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
21	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
22	1200Ω	1		BTA-1200	Br.-Red-Red-Filter
23	27Ω	½		BW-½-27	Red-Vi.-Blk. Surge Limiter

Note - Some models use 10 Meg. in this application. IRC replacement BTS-10 Meg.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CONCORD PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
24	2200Ω	3.2Ω	170Ω	.8Ω	Part of 45B6	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CONCORD PART No.	JENSEN PART No.		
25	FIELD PM	VC IMP. 3.2Ω	45B6	ST-105 Mod. P5-X		
26	CONE DIA. 4-5/8"	VC DIA. 1/2"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT			

R F COILS

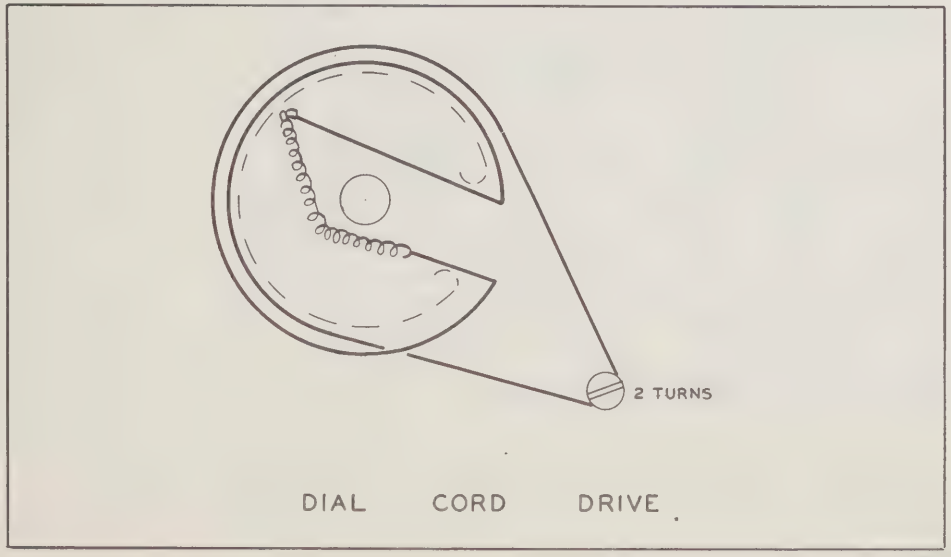
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CONCORD PART No.	MEISSNER PART No.	
27	Loop Ant.	.5Ω	1.5Ω	1C2		
28	Osc. Coil		5.5Ω	20Y5	14-1040	
29	Input IF	26Ω	25Ω	12Y4	16-6658	
30	Output IF	23Ω	23Ω	12Y8	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CONCORD PART No.		
31	Bayonet	6.3	0.15	Brown	66-1		Type 47

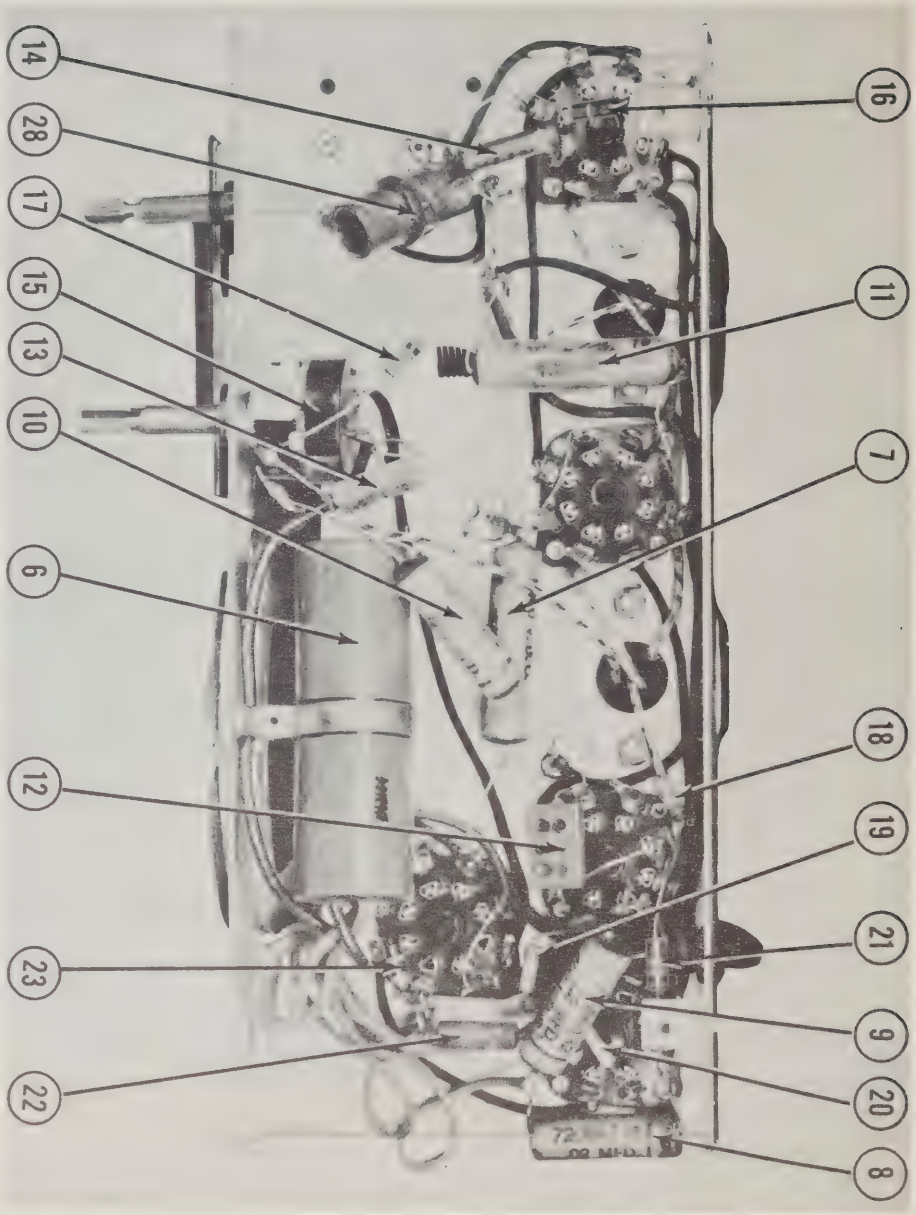
MISCELLANEOUS

ITEM No.	PART NAME	CONCORD PART No.	NOTES
32	2 Gang Var. Cap.	18B6	18-454MMF, 25-188MMF



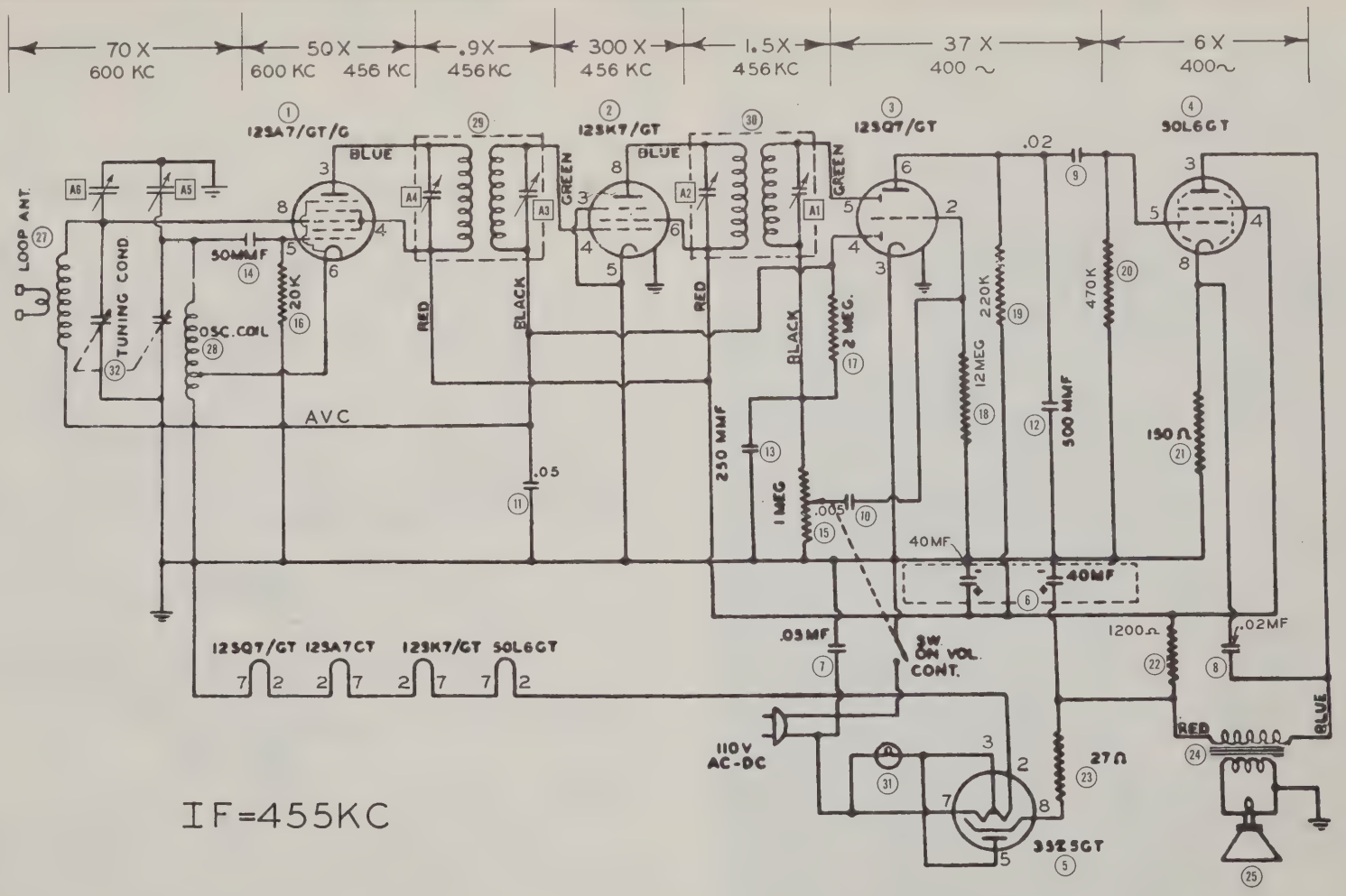
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



CONCORD MODEL 605IB

CONCORD MODEL 605IB



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	13V.AC	87V.DC	87V.DC	-5V.DC	0V.	26V.DC	-8V.DC
2	12SK7GT	0V.	26V.AC	0V.	-8V.DC	0V.	87V.DC	39V.AC	87V.DC
3	12SQ7GT	0V.	-.8V.DC	0V.	-.8V.DC	-.8V.DC	65V.DC	0V.	13V.AC
4	50L6 GT	0V.	90V.AC	112V.DC	87V.DC	0V.	0V.	39V.AC	6V.DC
5	35Z5 GT	0V.	117V.AC	111V.AC	0V.	111V.AC	116V.DC	90V.AC	117V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	12 Ω	80KΩ	80 KΩ	19 KΩ	.3Ω	23Ω	3 MEG.
2	12SK7GT	0Ω	23Ω	0Ω	3 MEG.	0Ω	80 KΩ	34Ω	80 KΩ
3	12SQ7GT	0Ω	10 MEG.	0Ω	3 MEG.	950KΩ	330KΩ	0Ω	12Ω
4	50L6GT	0Ω	80Ω	80 KΩ	80KΩ	460KΩ	INF.	34Ω	145Ω
5	35Z5GT	0Ω	102Ω	100Ω	0Ω	100Ω	80 KΩ	80Ω	80 KΩ

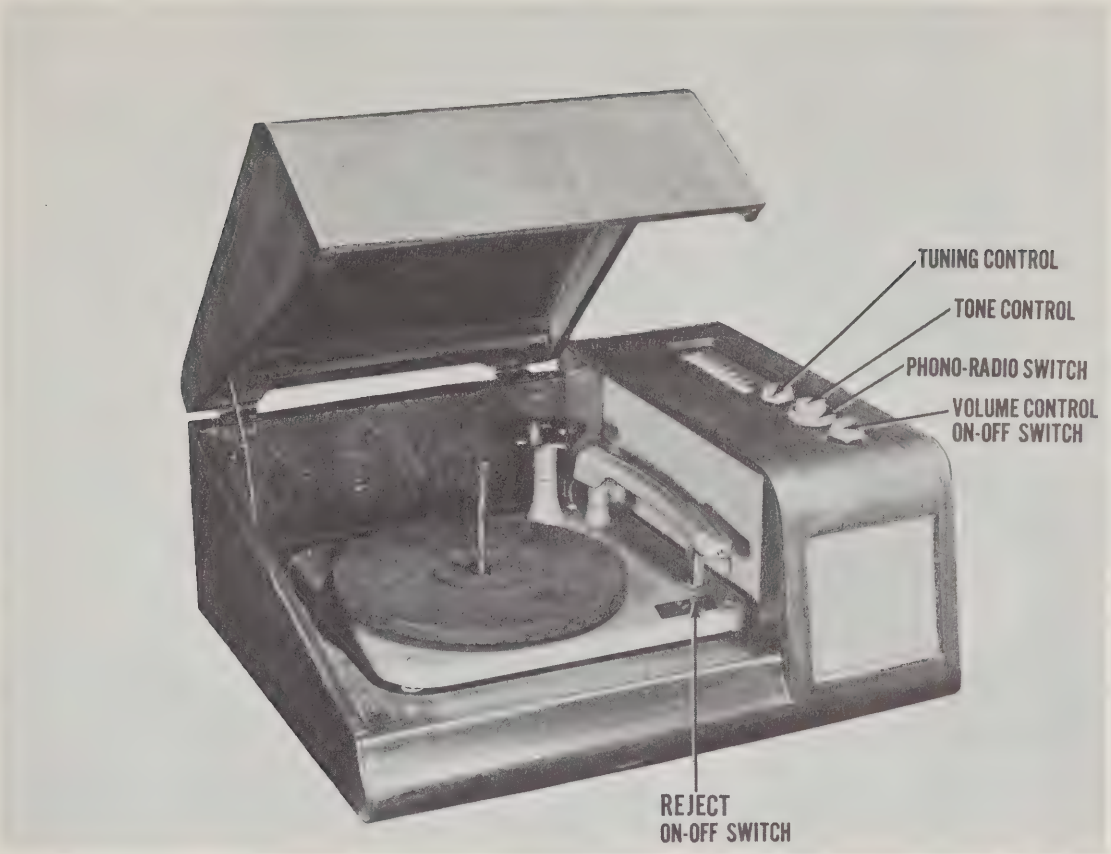
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-8

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



CONCORD
MODEL CD 61 P

CONCORD
MODEL CD 61 P

CONCORD MODEL CD61P

TRADE NAME	Concord, Model CD61P
MANUFACTURER	Concord Radio Corp., 901 W. Jackson Blvd., Chicago 7, Ill.
TYPE SET	AC Operated Combination Automatic Phono. - Superheterodyne Receiver, Self Contained Loop Antenna
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7GT Converter, 6SK7 IF Amp., 6SQ7GT Det.-AVC-AF, 6K6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	540-1600KC RATING .490 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Set volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to pin 8 of 12SA7. Low side to B-.	455KC	High freq. end of dial. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
2		Loop	1620KC	"	"	A5	Connect output of signal generator to two turns of wire and radiate signal into receiver loop. Adjust for maximum output.
3		"	1400KC	Tune for maximum output.	"	A6,A7.	"

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

CONCORD
MODEL CD61B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CONCORD PART No.	STANDARD REPLACEMENT		
1	RF Amp.		6SK7	6SK7	8N
2	Converter		6SA7GT	6SA7GT	8AD
3	IF Amp.		6SK7	6SK7	8N
4	Det.-AVC-AF		6SQ7GT	6SQ7GT	8Q
5	Power Output		6K6GT	6K6GT	7S
6	Rectifier		5Y3GT	5Y3GT	5T

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CONCORD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7A	15	450		AF44J	UP6CJ17	FP339		EL-205	■ Filter
B	10	350		"				"	▲ "
C	20	25		PRS25-25					Cath. Bypass
8	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Line Bypass
9	.002	600		684-002	DT6D2	TP405	S-6-002	TC-22	6K6 Plate Bypass
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Tone Compensation
11	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
12	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Audio Plate Decoup.
13	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
14	.05	200		484-05	DT4S5	TP426	S-4-05	TC-15	Tone Compensation
15	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	IF Plate Bypass
16	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Conv. Screen Bypass
17	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Screen Bypass
18	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
19	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
20	220	500		1468-0002	5W5T2	MC237	M0.5-32	1FM-32	Audio Plate Bypass
21	100	500		1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Tone Compensation
22	100	500		1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Osc. Grid Capacitor

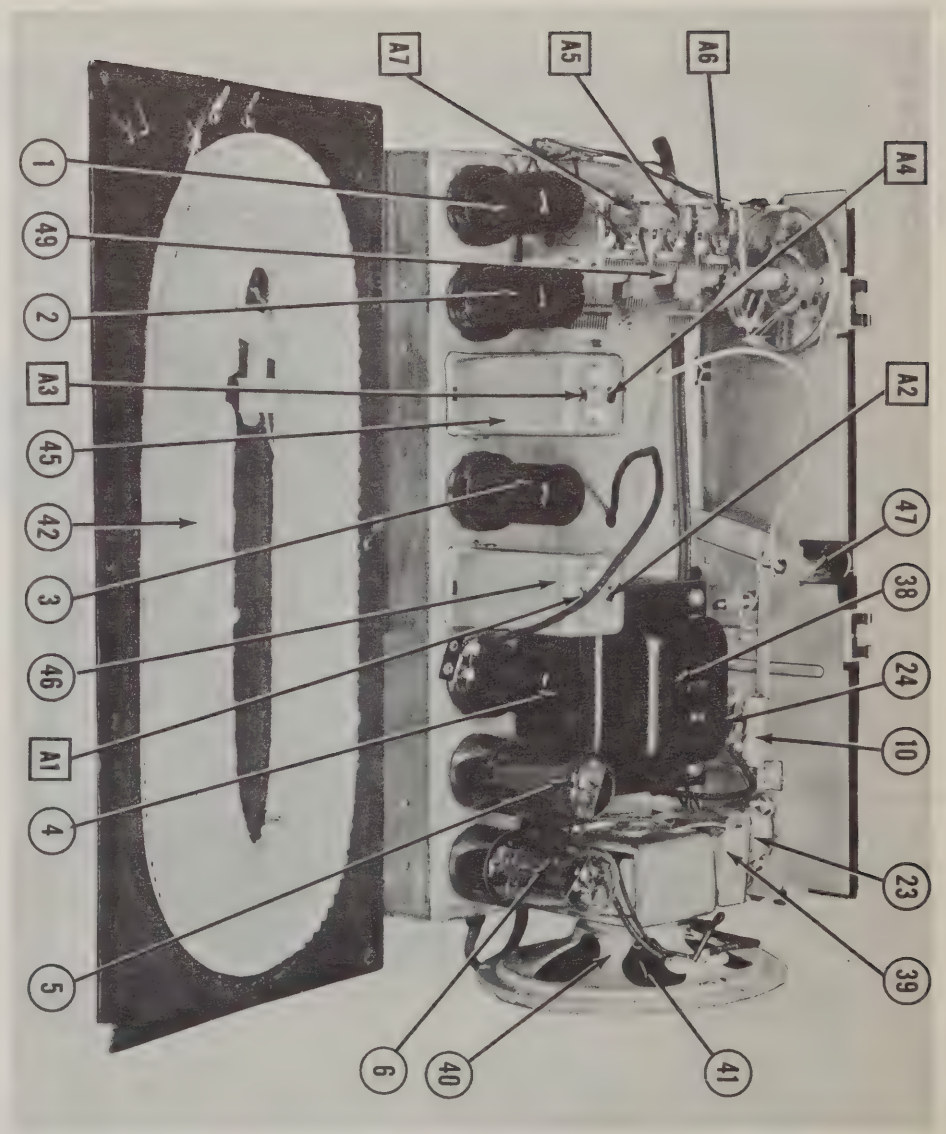
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CONCORD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
23A	500KΩ	1	B55575-1	TM-233	D18-133X	AT88	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
24A	500KΩ	1	B55550-1	MK401	D13-133	AM-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 24A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CONCORD PART No.	IRC PART No.	
25	100KΩ	1/3	BR17B104	BTS-100K	Br.-Blk.-Yl. AVC Network
26	3.3 Meg.	1/3	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
27	1000Ω	1/3	BR17B102	BTS-1000	Br.-Blk.-Red RF Coil Shunt
28	22KΩ	1	BR17E223	BTA-22K	Red-Red-Or. Screen Dropping
29	22KΩ	1/3	BR17B223	BTS-22K	Red-Red-Or. Osc. Grid
30	15KΩ	2	BR17G153	BT-2-15K	Br.-Grn.-Or. Converter Screen Dropping
31	15 Meg.	1/3	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
32	1000Ω	1/3	BR17B102	BTS-1000	Br.-Blk.-Red IF Plate Filter
33	10KΩ	1/3	BR17B103	BTS-10K	Br.-Blk.-Or. Tone Compensation
34	6.8 Meg.	1/3	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
35	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. 1st AF Plate Load
36	100KΩ	1/3	BR17B104	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Filter
37	560Ω	1	BR16E561	BTA-560	Grn.-Blue-Br. Output Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CONCORD PART No.	STANCOR PART No.	THORDARSON PART No.	
38	117VAC @ .490A	610VCT @ .073A	5.1VAC @ 1.8A	6.4VAC @ 1.8A	C-51502	P-6120	T-22R04	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CONCORD PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
39	8500Ω	3.2Ω	700Ω	.75Ω	Part of C-51512	A-3856*	T-22S47*		*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD RES.	VC IMP.	CONCORD PART No.	JENSEN PART No.		
40	460Ω	3.2Ω	C-51512	ST-450† Mod. H5-S		†Fabricate new mounting bracket.
	CONE DIA.	VC DIA.				
41	4¾"	½"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	CONCORD PART No.	MEISSNER PART No.	
42	Loop Ant.		1Ω			
43	RF Coil	30Ω	5Ω	B51511	14-1027	
44	Osc. Coil		5.8Ω	B51522	14-1040	
45	Input IF	28Ω	22Ω	B51416-2	16-6658	
46	Output IF	26.7Ω		B51417-2	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CONCORD PART No.		
47	Bayonet	6-8	0.25	Blue			Type 44

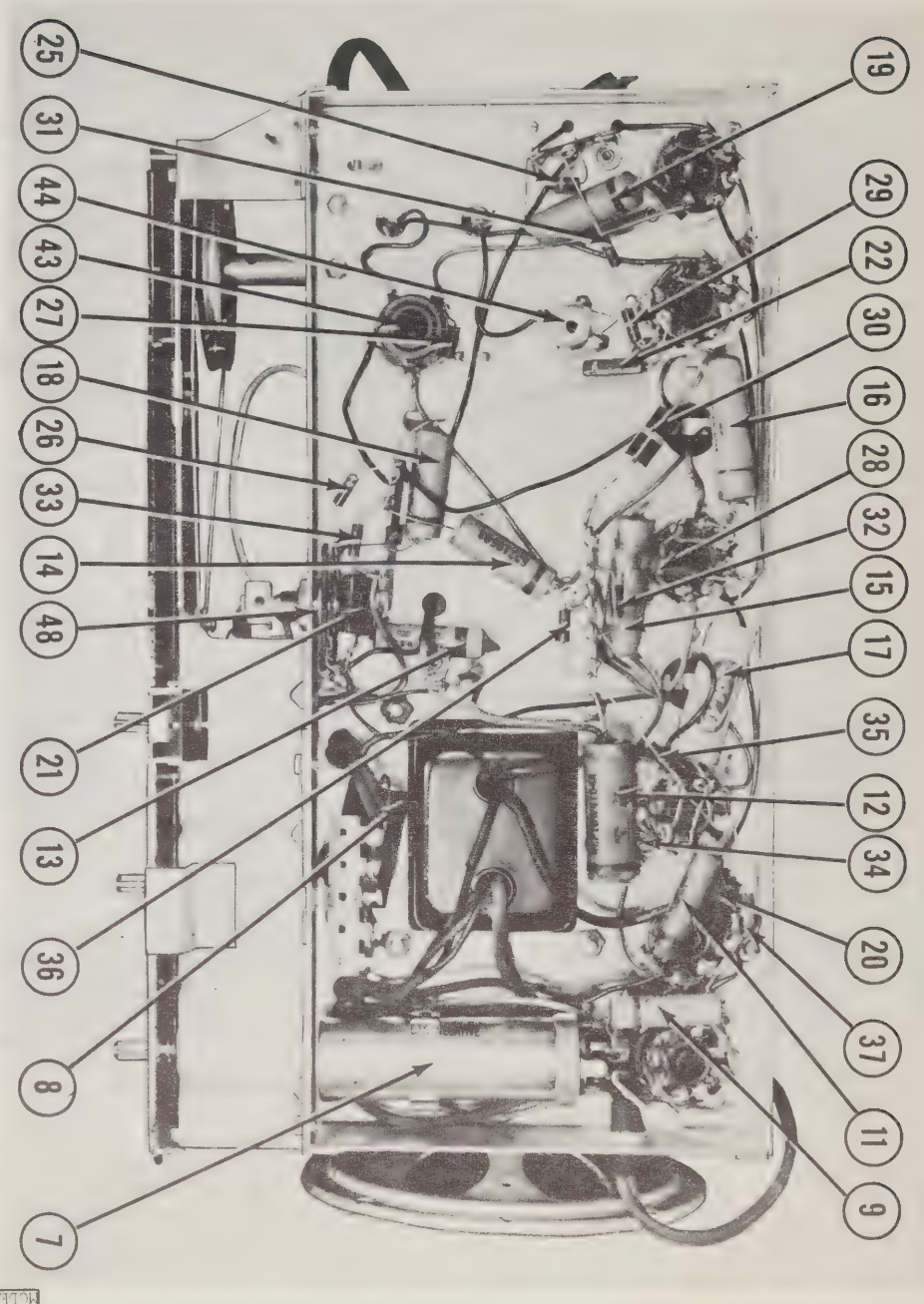
MISCELLANEOUS

ITEM No.	PART NAME	CONCORD PART No.	NOTES
48	Switch	B-55500-1	Radio-Phono
49	Tuning Cap.	C-51501-1	

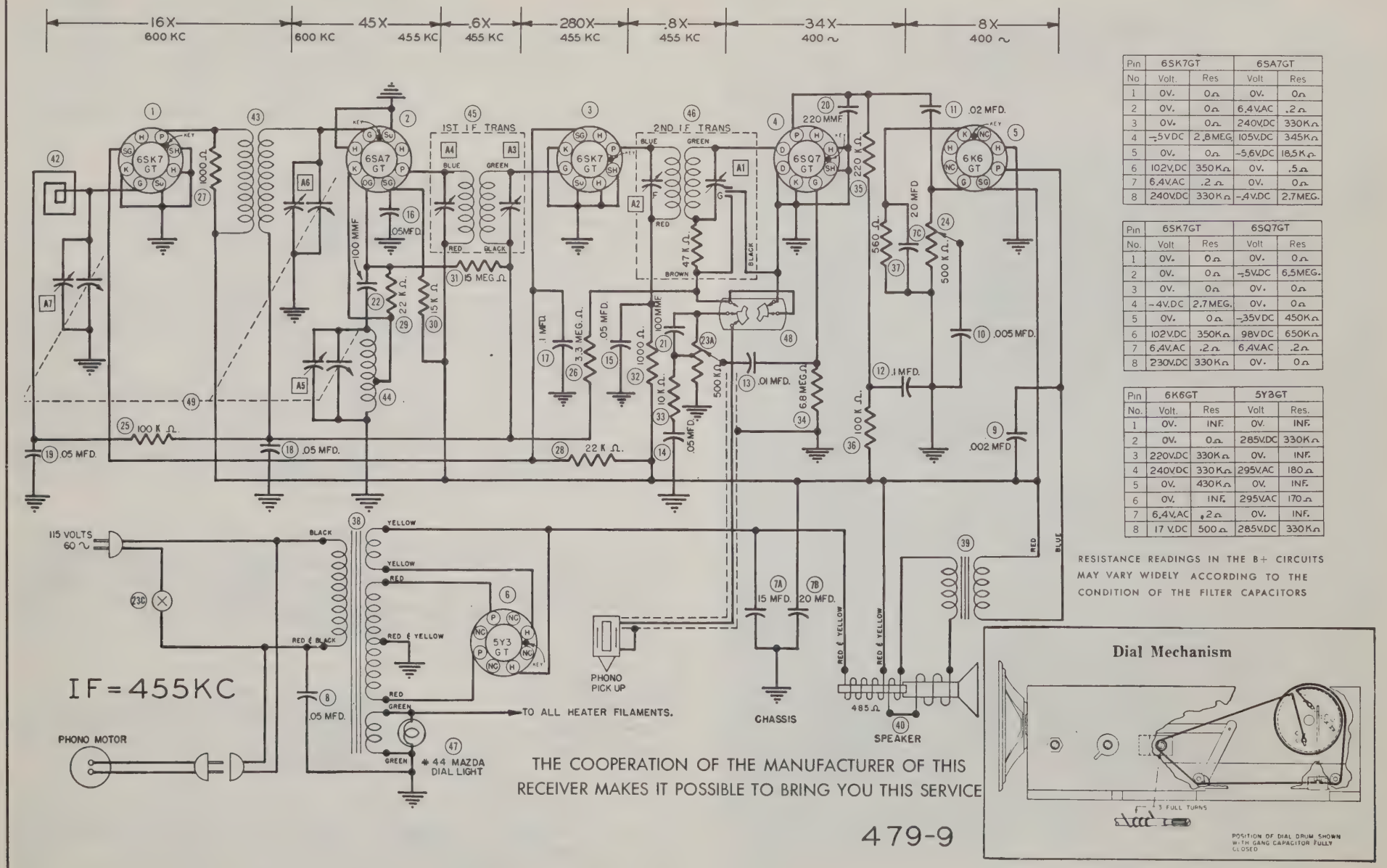
DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type knobs from the front panel.
2. Remove four hex head screws and two washers from the two brackets holding one side of chassis to the cabinet. Remove the two brackets.
3. Remove four hex head screws from cardboard side grill of receiver. Remove grill.
4. Remove the two small hex head screws and washers and two larger hex head screws and washers from the bracket holding the other side of chassis to the cabinet.
5. Disconnect the phono-motor plug.
6. Unsolder the phono-pickup leads from the terminal strip on the back of the chassis.
7. Unsolder the black and green loop antenna leads.
8. Remove chassis from cabinet.

CHASSIS—BOTTOM VIEW



CONCORD MODEL CD61F



Pin	6SK7GT		6SA7GT	
No	Volt.	Res	Volt	Res
1	0V.	0Ω	0V.	0Ω
2	0V.	0Ω	6.4V.AC	.2Ω
3	0V.	0Ω	240V.DC	330KΩ
4	−5VDC	2.8MEG.	105V.DC	345KΩ
5	0V.	0Ω	−5.6V.DC	18.5KΩ
6	102V.DC	350KΩ	0V.	.5Ω
7	6.4V.AC	.2Ω	0V.	0Ω
8	240V.DC	330KΩ	−4V.DC	2.7MEG.

Pin	6SK7GT		6SQ7GT	
No.	Volt	Res	Volt	Res
1	0V.	0Ω	0V.	0Ω
2	0V.	0Ω	−5V.DC	6.5MEG.
3	0V.	0Ω	0V.	0Ω
4	−4V.DC	2.7MEG.	0V.	0Ω
5	0V.	0Ω	−35V.DC	450KΩ
6	102V.DC	350KΩ	98V.DC	650KΩ
7	6.4V.AC	.2Ω	6.4V.AC	.2Ω
8	230V.DC	330KΩ	0V.	0Ω

Pin	6K6GT		5Y3GT	
No.	Volt.	Res	Volt	Res.
1	0V.	INF.	0V.	INF.
2	0V.	0Ω	285V.DC	330KΩ
3	220V.DC	330KΩ	0V.	INF.
4	240V.DC	330KΩ	295V.AC	180Ω
5	0V.	430KΩ	0V.	INF.
6	0V.	INF.	295V.AC	170Ω
7	6.4V.AC	.2Ω	0V.	INF.
8	17 V.DC	500Ω	285V.DC	330KΩ

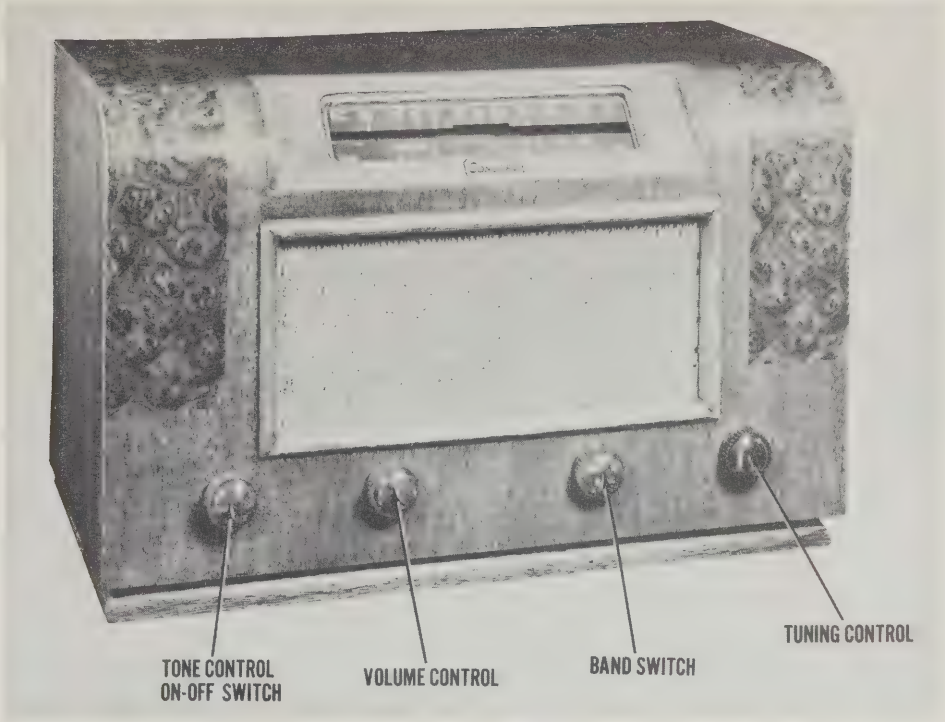
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-9

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



CONCORD
MODEL 6F26W

CONCORD
MODEL 6F26W

CONCORD MODEL 6F26W

TRADE NAME	Concord, Model 6F26W
SUPPLIER	Concord Radio Corp., 901 W. Jackson Blvd., Chicago, Ill.
TYPE SET	AC-DC Operated 2 Band Superheterodyne with Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12AT6 Det.-AVC-AF, 35L6GT Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC — RATING .250 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	530-1730KC — **SHORT WAVE** 5.4-18.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum position, output of signal generator no higher than necessary to obtain output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	BC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to 200 MMF to reduce hum modulation.
2	.1 MFD.	"	1730KC	"	"	"	A5	"
3	200MMFD	High side to ext. ant. lead. Low side to B-.	1400KC	"	Tune for maximum output.	"	A6	Adjust for maximum output.
4	200MMFD.	"	600KC	"	"	"	A7	Rock tuning cap and adjust for maximum output. Repeat Steps 2, 3, 4.
5	400Ω	"	18.3MC	SW	Tuning cap. fully open.	"	A8	Adjust for maximum output. Check for image by turning up the output of the signal generator and tuning receiver to approximately 17.3MC. If image is not heard, turn tuning cap. fully open and loosen A8 until next peak is obtained. Adjust for maximum output. Again check for image as stated above.
6	400Ω	"	16MC	"	Tune for maximum output.	"	A9	Rock tuning cap. and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

CONCORD
MODEL 6F26W

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CONCORD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7GT	12SA7GT	8AD	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12AT6	12AT6	7BT	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CONCORD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	EC-4	AF888D	UP6CJ44	FP357	DY-3x40-150	EL-340	Filter - Red
B	40	150							" - "
C	40	150							" - Blue
8	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
9	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	Tone Compensation
10	.01	400	PC-7	484-01	DT4S1	TP421	S-4-01	TC-11	Output Plate Bypass
11	.006	600		684-006	DT6D6	TP409	S-6-006	TC-26	Audio Coupling
12	.005	600	PC-6	684-005	DT6D5	TP408	S-6-005	TC-25	" "
13	.1	400	PC-8	484-.1	DT4P1	TP428	S-4-1	TC-1	IF Screen Bypass
14	.1	400	PC-8	484-.1	DT4P1	TP428	S-4-1	TC-1	RF Screen Bypass
15	.05	400	PC-5	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
16	.1	400	PC-8	484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
17	.01	400	PC-7	484-01	DT4S1	TP421	S-4-01	TC-11	Ext. Ant. Coupling
18	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Audio Plate Bypass
19	100	500	MC-2	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Diode Filter
20	100	500	MC-2	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	" "
21	50	500	MC-4	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
22	475	500	MC-1						Fixed Padder
23	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	RF Coupling

CONTROLS

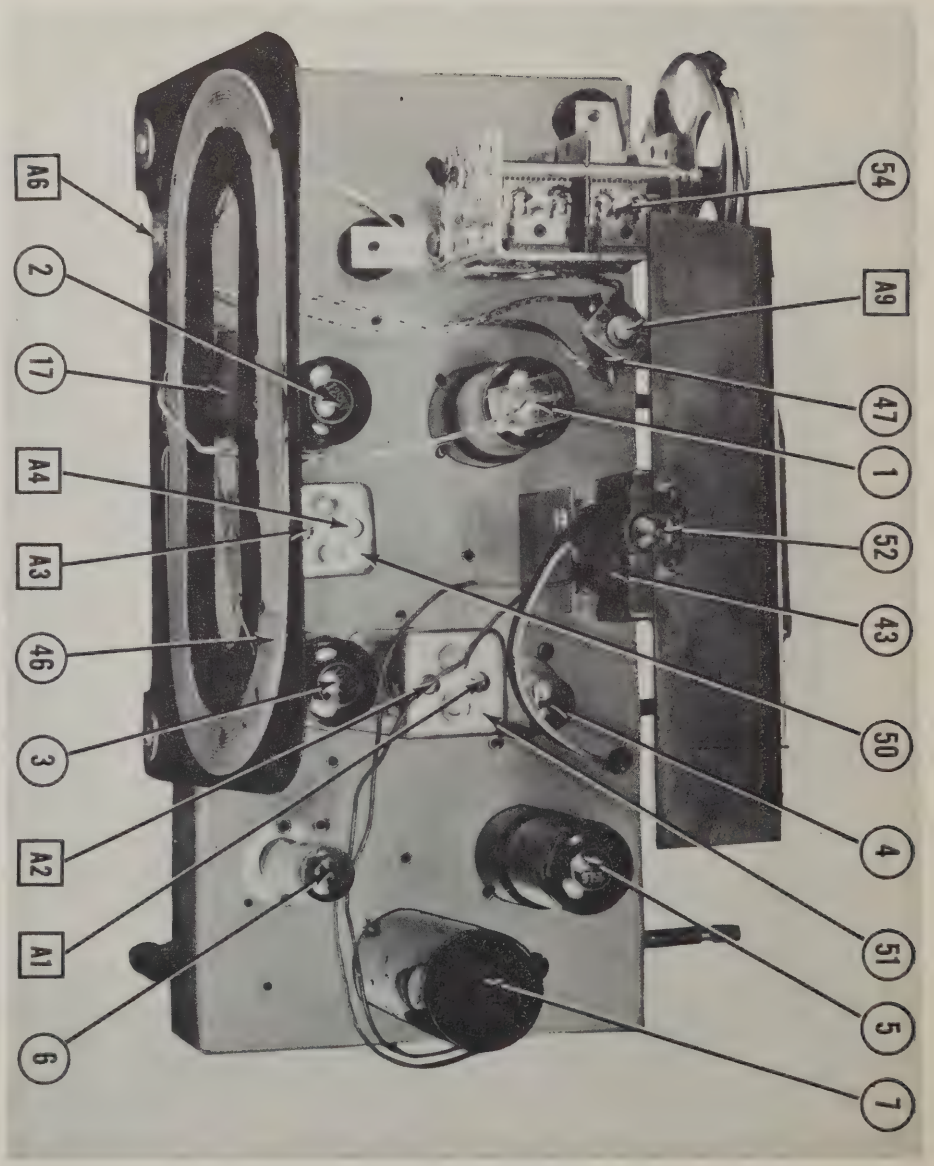
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CONCORD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
24A	1 Meg.	1	VC-4	MK402	D13-133	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 24A per instructions
25A	25KΩ	1		UM129	D11-120	AM-40-S	Tone Control
B	Shaft			S825	E	KSS-3	Attach to 25A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CONCORD PART No.	IRC PART No.	IDENTIFICATION CODES
26	220KΩ	½	1R-20	BTS-220K	Red-Red-Yl. Line Isolation
27	470Ω	½	1R-6	BTS-470	Yl.-Vi.-Br. Converter Cathode
28	4700Ω	½	1R-18	BTS-4700	Yl.-Vi.-Red RF Plate Load
29	22KΩ	½	1R-8	BTS-22K	Red-Red-Or. RF Screen Dropping
30	50KΩ	½	1R-10	BTS-47K	Grn.-Blk.-Or. Converter Grid
31	22KΩ	½	1R-9	BTS-22K	Red-Red-Or. Oscillator Grid
32	1000Ω	½	1R-24	BTS-1000	Br.-Blk.-Red IF Plate Decoupling
33	50KΩ	½	1R-10	BTS-47K	Grn.-Blk.-Or. Diode RF Filter
34	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. AVC Network-See Note1
35	2 Meg.	½	1R-13	BTS-2.2 Meg.	Red -Blk.-Grn. AF Grid
36	510KΩ	½	1R-11	BTS-470K	Grn.-Br.-Yl. AF Plate Load
37	510KΩ	½	1R-11	BTS-470K	Grn.-Br.-Yl. Output Grid
38	150Ω	½	1R-5	BW-½-150	Br.-Grn.-Br. Output Cathode-See Note 2
39	2200Ω	½	1R-7	BTS-2200	Red-Red-Red Tone Compensation-See Note 3
40	390Ω	2	1R-21	BW-2-390	Or.-White-Br. Filter
41	220Ω	½	1R-5	BW-½-220	Red-Red-Br. Filter - See Note 4
42	39Ω	½	1R-17	BW-½-39	Or.-White-Blk. Rectifier Ballast

Note 1 - Some models use 2 Meg. in this application. Replacement same as Item 35.
Note 2 - Some models use 220Ω in this application. Replacement same as Item 41.
Note 3-- Not used in models with variable tone control.
Note 4 - Some models use 150Ω and 47Ω in this application. Replacement same as above.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CONCORD PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
43	2040Ω	2.8Ω	150Ω	.59Ω	Part of SPK-4	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CONCORD PART No.	JENSEN PART No.		
44	FIELD	VC IMP.	SPK-4	ST-105† Mod. P5-X		†Fabricate new mounting bracket.
	PM	2.8Ω				
45	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	4-9/16"	1/2"				

R F COILS

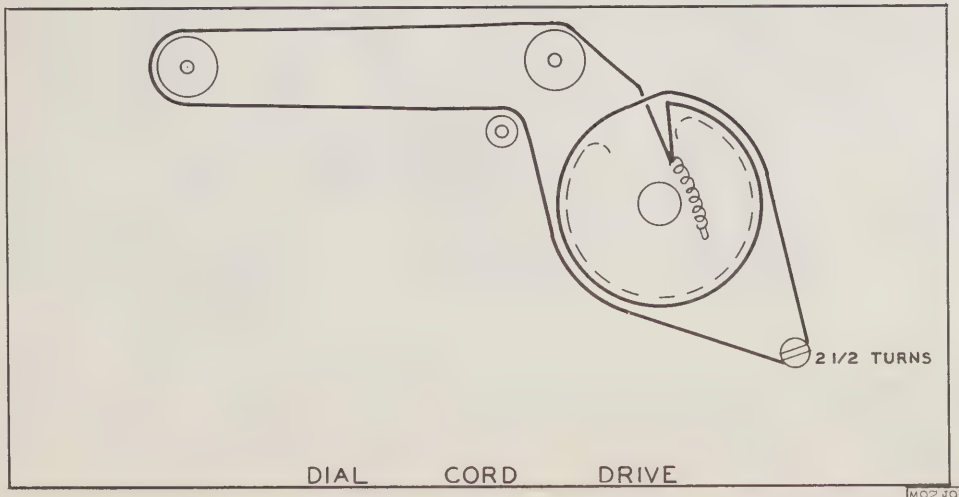
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CONCORD PART No.	MEISSNER PART No.	
46	Loop Ant.	.2	1.4Ω	LL-2		
47	SW Ant.Coil	.1Ω	.3Ω	LA-2	14-1044	
48	BC Osc.Coil	1.5Ω	6Ω	LO-3	14-1040	
49	SW Osc.Coil		0Ω	LO-4	14-1046	
50	Input IF	19Ω	19Ω	LI-1	16-6658	
51	Output IF	20Ω	19Ω	LI-2	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CONCORD PART No.		
52	Bayonet	6-8	.15	Brown	PB-1		Type 47

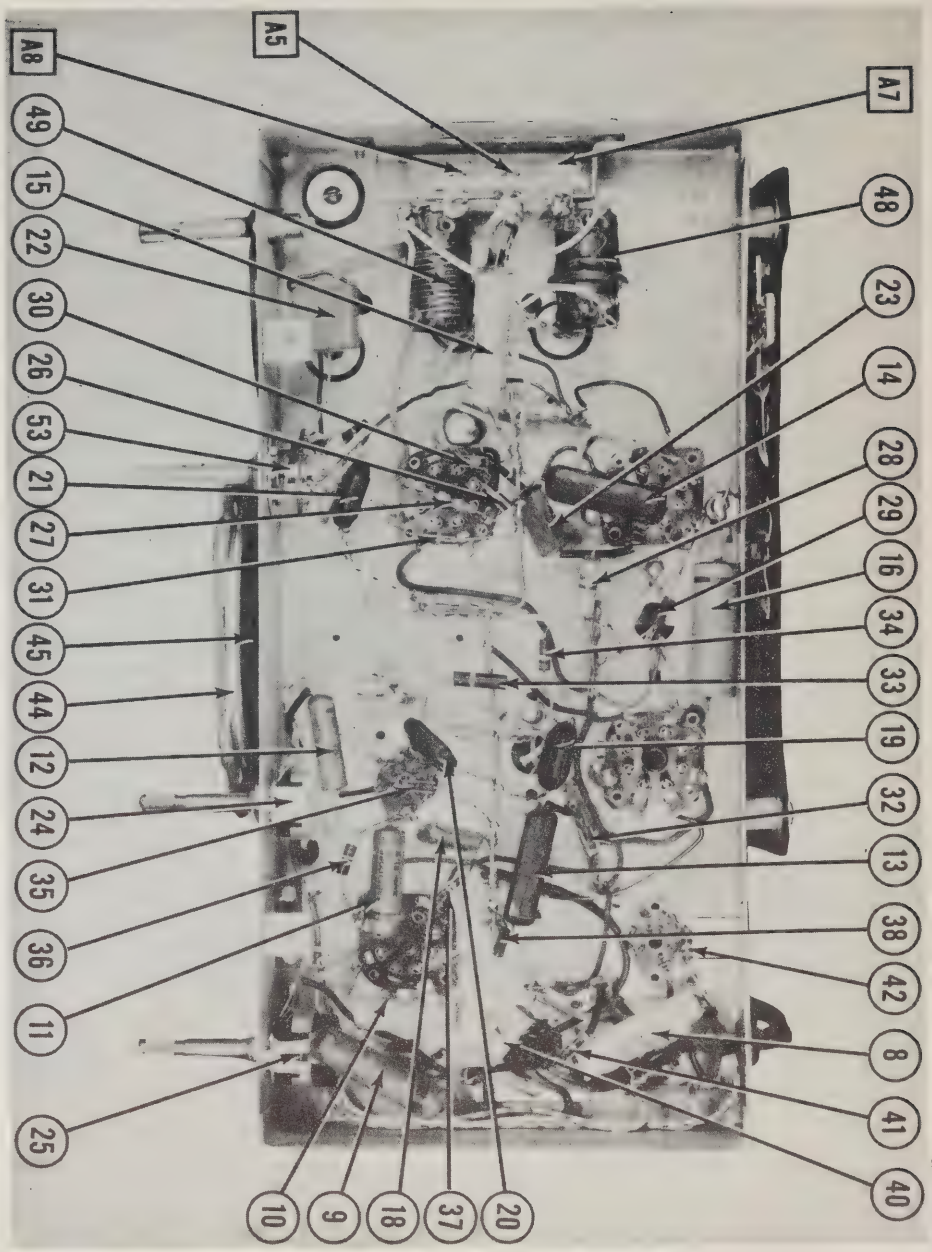
MISCELLANEOUS

ITEM No.	PART NAME	CONCORD PART No.	NOTES
53	Bandswitch	SW-1	
54	2 Gang Var. Cap	GC-1	16-562 MMF, 15-475 MMF

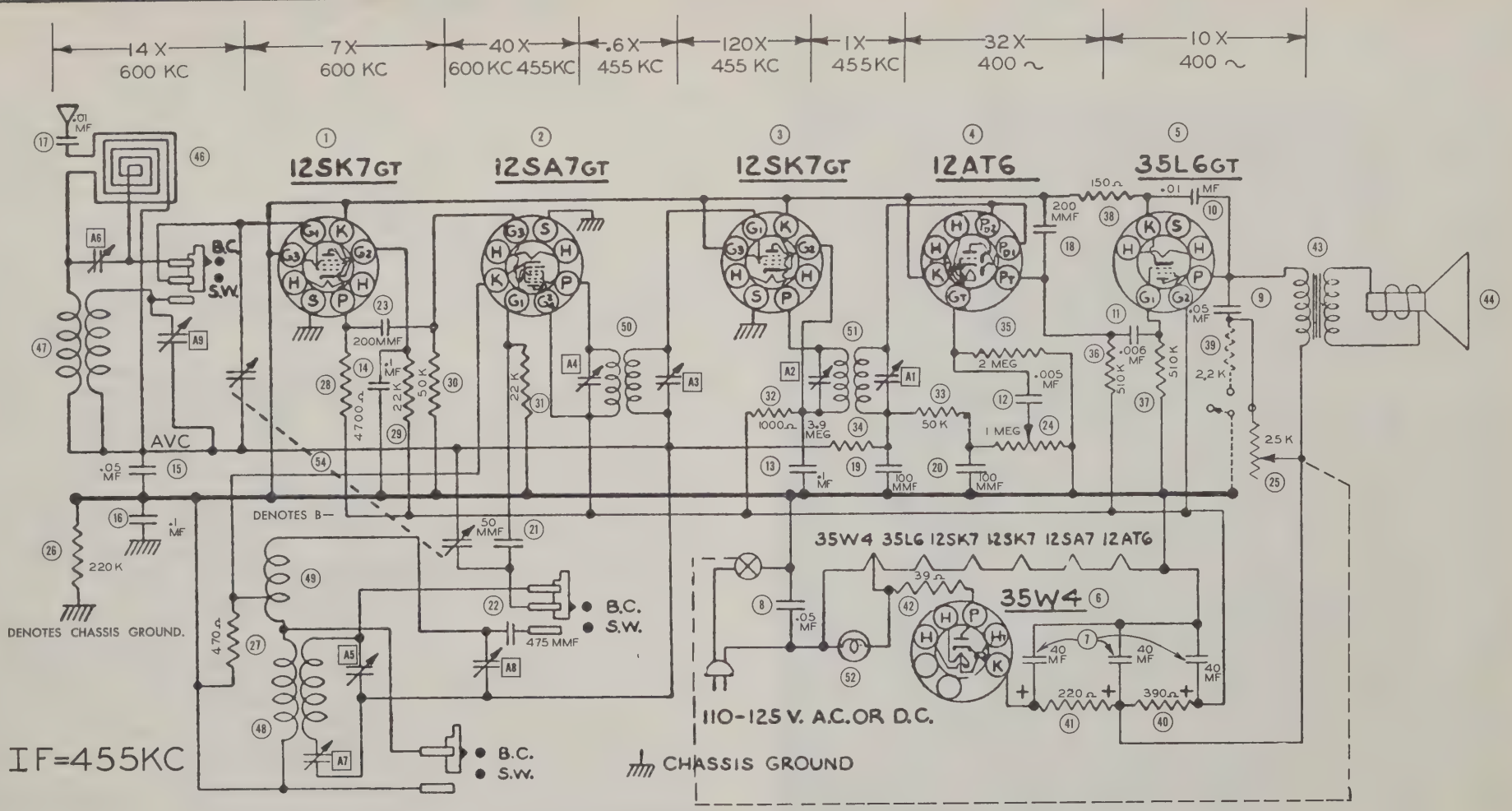


CONCORD MODEL 6P26W

CHASSIS—BOTTOM VIEW



CONCORD MODEL 6P26W



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	26 V.AC	0V.	−9 V.DC	0V.	57 V.DC	39 V.AC	60 V.DC
2	12SA7GT	0V.	26 V.AC	85 V.DC	85 V.DC	−3 V.DC	0V.	13 V.AC	0V.
3	12SK7GT	0V.	39 V.AC	0V.	−9 V.DC	0V.	75 V.DC	52 V.AC	75 V.DC
4	12AT6	−5 V.DC	0V.	0V.	13 V.AC	−2 V.DC	−2 V.DC	52 V.DC	
5	35L6GT	0V.	87 V.AC	90 V.DC	85 V.DC	0V.	0V.	52 V.AC	5.4 V.DC
6	35W4	0V.	0V.	87 V.AC	117 V.AC	111 V.AC	113 V.AC	112 V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	210 K Ω	23 Ω	0 Ω	4 MEG.	0 Ω	90 K Ω	32 Ω	75 K Ω
2	12SA7GT	210 K Ω	23 Ω	70 K Ω	70 K Ω	18 K Ω	1.2 Ω	11 Ω	48 K Ω
3	12SK7GT	210 K Ω	32 Ω	0 Ω	4 MEG.	0 Ω	70 K Ω	42 Ω	70 K Ω
4	12AT6	2 MEG.	0 Ω	0 Ω	11 Ω	950 K Ω	950 K Ω	500 K Ω	
5	35L6GT	210 K Ω	70 Ω	70 K Ω	70 K Ω	440 K Ω	INF.	42 Ω	140 Ω
6	35W4	INF.	INF.	70 Ω	97 Ω	130 Ω	95 Ω	70 K Ω	

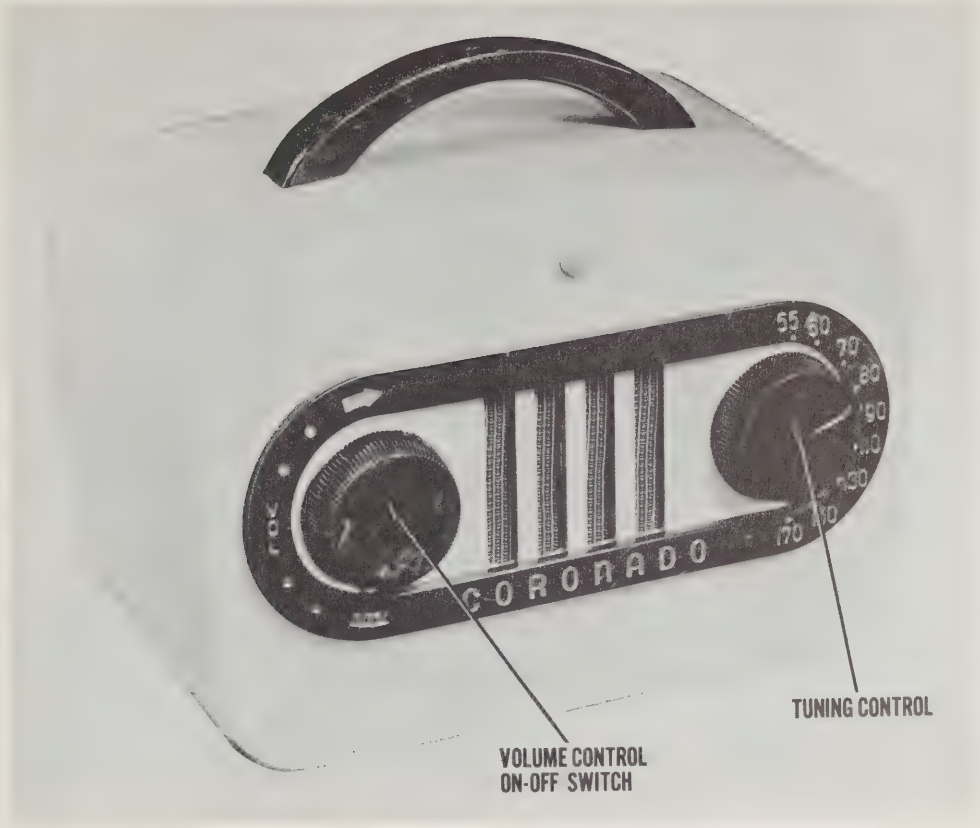
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-10

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



CORONADO
MODEL 43-8190

CORONADO
MODEL 43-8190

CORONADO MODEL 43-8190

TRADE NAME	Coronado, Model 43-8190
MANUFACTURER	"Coronado", Minneapolis, Minn. or Los Angeles, Calif.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC -DC
TUNING RANGE—BROADCAST	540-1725KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMFD	High side to ext. ant. Low side to chassis.	1725KC	"	"	A5	Adjust for maximum output.
3	200MMFD	"	1500KC	Tune for maximum output.	"	A6	" " " "

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

CORONADO
MODEL 43-8190

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CORONADO PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	30	150		PRSA150-30-	BRD3315	2N513	M-2x30-150	TA-330	Filter - Yellow
B	30	150		30					" - Red
7	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	Line Filter
8	.02	600		684-02	DT6S2	TP412	S-6-02	TC-12	Output Plate Bypass
9	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	Audio Coupling
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
11	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	AVC Filter
12	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	RF Bypass Pwr. Supp.
13	.1	600		684-.1	DT6P1	TP418	S-6-1	TC-1	Line Isolation
14	.02	600		684-02	DT6S2	TP412	S-6-02	TC-12	Osc. Tuning Cap. Isol.
15	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	AVC Filter
16	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	Ext. Ant. Coupling
17	220	500		1468-0002	5W5T2	MC237	MO.5-322	1FM-32	Audio Plate Bypass
18	220	500		1468-0002	5W5T2	MC237	MO.5-322	1FM-32	IF Bypass Vol. Cont.

CONTROLS

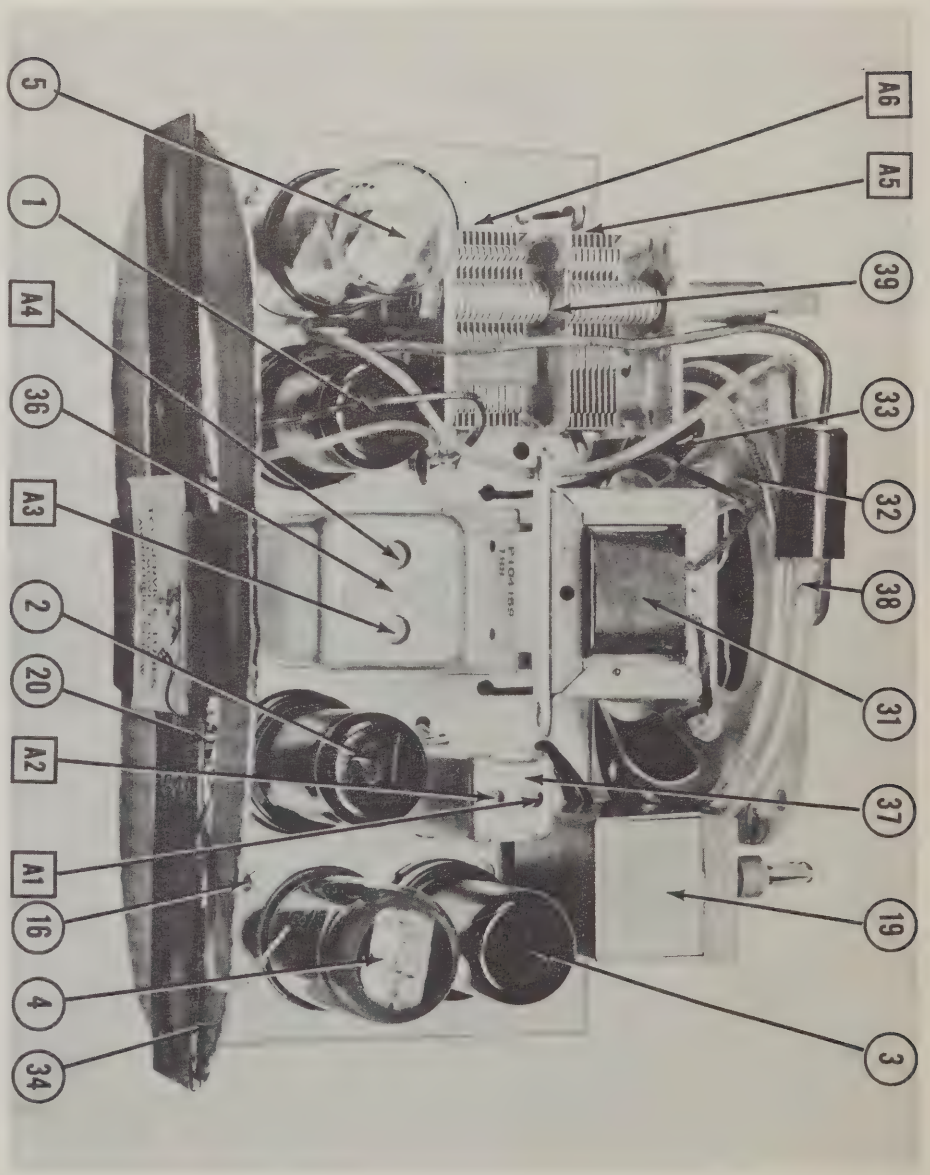
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
19A	500KΩ	1		MK401	D13-133	AM-60-Z	Volume Control
B	Shaft			Not Req.	E	KSS-3	Attach to 19A per instructions
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CORONADO PART No.	IRC PART No.	
20	470Ω	½		BTS-470	Yl.-Vi.-Br. Antenna Loading
21	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
22	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Line Isolation
23	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
24	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
25	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
26	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
27	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
28	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
29	2700Ω	2		BT-2-2700	Red-Vi.-Red Filter
30	39Ω	½		BW-½-39	Or.-White-Blk. Rectifier Ballast-See Note

Note - Some models use 18Ω in this application. IRC replacement BW-½-18.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
31	3000Ω	3.9Ω	150Ω	.4Ω		A-3876	T22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CORONADO PART No.	JENSEN PART No.		
32	FIELD / PM	VC IMP. 3.9Ω		ST-113 Mod. P4-X		
33	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	
34	Loop Ant.	.1Ω	1.2Ω			
35	Osc. Coil		5.8Ω		14-1040	Add 50MMFD from grid to high side tuning cap.
36	Input IF	20Ω	19Ω		16-6658	
37	Output IF	42Ω	42Ω		16-6660	

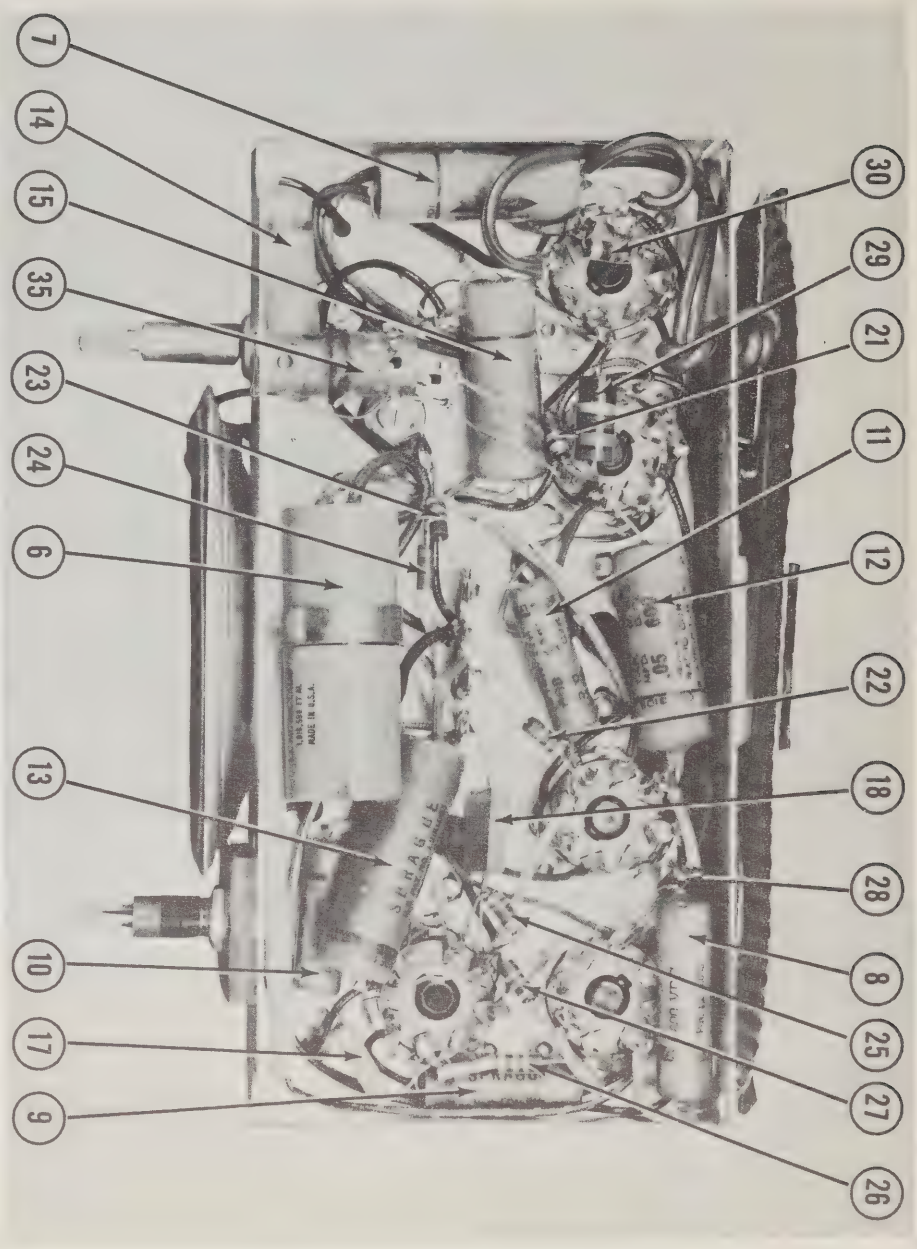
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CORONADO PART No.		
38	Bayonet	6-8	0.15	Brown			Type 47

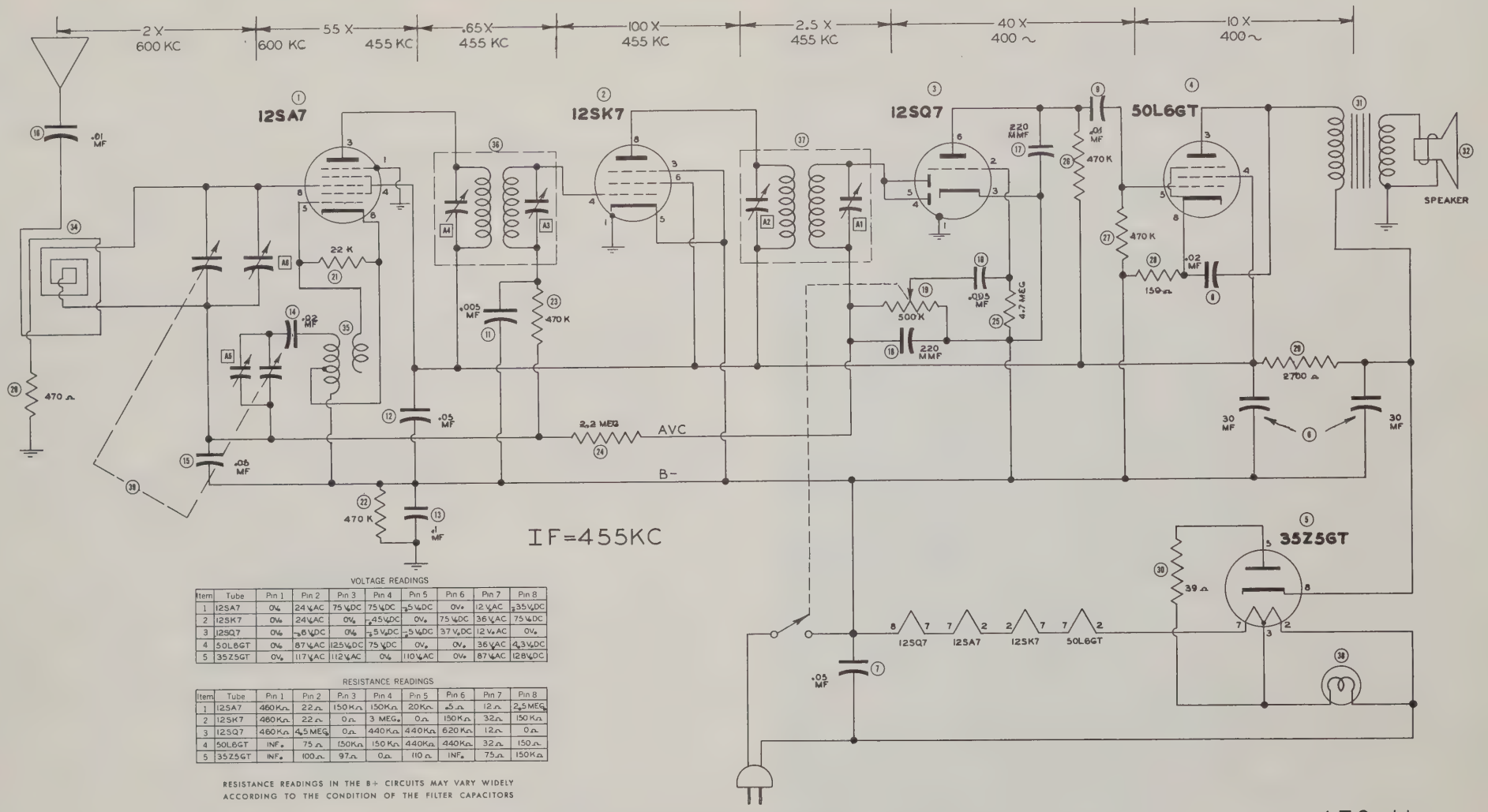
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
39	2 Gang Var.Cap.		19-458 MMF, 23-187 MMF

CHASSIS—BOTTOM VIEW



MODEL 43-8190



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	24 V.AC	75 V.DC	75 V.DC	±5 V.DC	0V.	12 V.AC	±35 V.DC
2	12SK7	0V.	24 V.AC	0V.	-.45 V.DC	0V.	75 V.DC	36 V.AC	75 V.DC
3	12SQ7	0V.	-8 V.DC	0V.	-5 V.DC	-5 V.DC	37 V.DC	12 V. AC	0V.
4	50L6GT	0V.	87 V.AC	125 V.DC	75 V.DC	0V.	0V.	36 V.AC	43 V.DC
5	35Z5GT	0V.	117 V.AC	112 V.AC	0V.	110 V.AC	0V.	87 V.AC	128 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	460 KΩ	22 Ω	150 KΩ	150 KΩ	20 KΩ	5 Ω	12 Ω	2.5 MEG.
2	12SK7	460 KΩ	22 Ω	0 Ω	3 MEG.	0 Ω	150 KΩ	32 Ω	150 KΩ
3	12SQ7	460 KΩ	4.5 MEG.	0 Ω	440 KΩ	440 KΩ	620 KΩ	12 Ω	0 Ω
4	50L6GT	INF.	75 Ω	150 KΩ	150 KΩ	440 KΩ	440 KΩ	32 Ω	150 Ω
5	35Z5GT	INF.	100 Ω	97 Ω	0 Ω	110 Ω	INF.	75 Ω	150 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

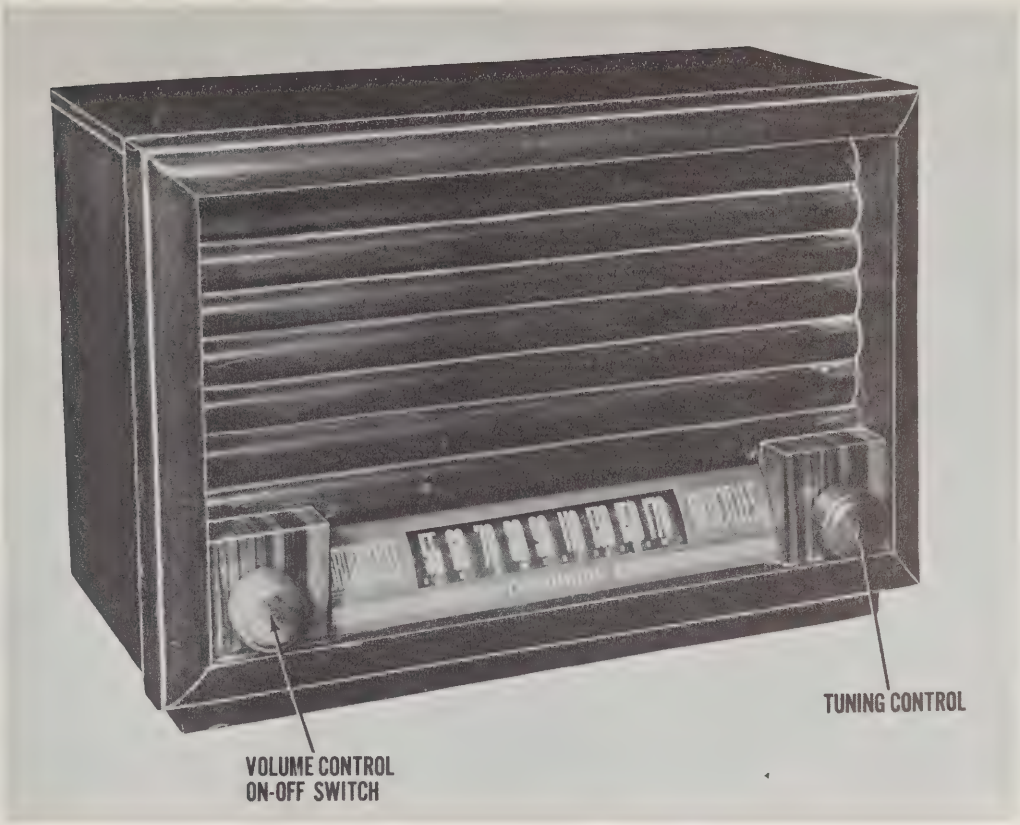
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-11

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CORONADO
MODEL 43-8330



CORONADO
MODEL 43-8330

CORONADO MODEL 43-8330

TRADE NAME	Coronado, Model 43-8330
MANUFACTURER	"Coronado", Minneapolis, Minn., Los Angeles, Calif.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	540-1725KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMFD	High side to ext. ant. lug. Low side to chassis.	1725KC	"	"	A5	Adjust for maximum output.
3	200MMFD	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

CORONADO
M LLL. 43-3330

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CORONADO PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8W	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	30	150		PRSA150-30-30	BRD3315	2N513	M-2x30-150	TA-330	Filter - Yellow
B	30	150							" - Red
7	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.02	600		684-02	DT6S2	TP412	S-6-02	TC-12	Output Plate Bypass
9	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	Audio Coupling
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
11	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	RF Bypass Pwr. Supp.
12	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	AVC Filter
13	.02	600		684-02	DT6S2	TP412	S-6-02	TC-12	Ext. Ant. Coupling
14	.02	600		684-02	DT6S2	TP412	S-6-02	TC-12	Osc. Tuning Cap. Isol.
15	.1	600		684-.1	DT6P1	TP418	S-6-1	TC-1	Line Isolation †
16	220	500		1468-0002	5W5T2	MC237	M0.5-322	1FM-32	Audio Plate Bypass
17	220	500		1468-0002	5W5T2	MC237	M0.5-322	1FM-32	IF Bypass Vol. Cont.

†Not used in all models.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
18A	500KΩ	1		MR48*	D13-133*	AM-60-Z*	Volume Control
B	Shaft			Not Req.	F	RS-3	Attach to 18A per instructions
C	Switch			M26	41	SW-A	" " " " "

*Use original dial cord pully.

RESISTORS

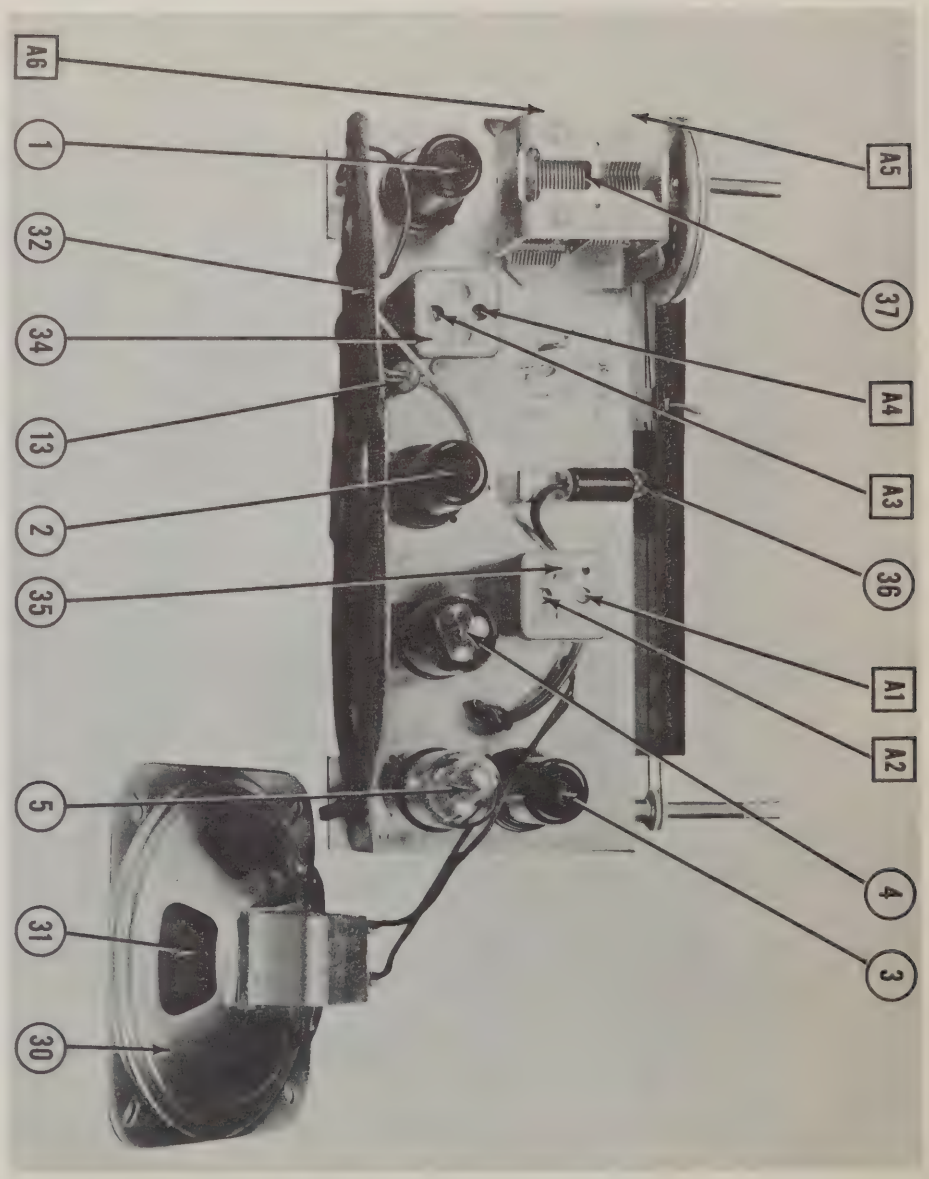
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CORONADO PART No.	IRC PART No.	
19	470Ω	½		BTS-470	Y1.-V1.-Br. Antenna Loading
20	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
21	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
22	4.7 Meg.	½		BTS-4.7 Meg.	Y1.-V1.-Grn. AF Grid
23	470KΩ	½		BTS-470K	Y1.-V1.-Y1. AF Plate Load
24	470KΩ	½		BTS-470K	Y1.-V1.-Y1. Output Grid
25	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
26	2700Ω	2		BT-2-2700	Red-V1.-Red Filter
27	18Ω	½		BW-½-18	Br.-Gray-Blk. Rectifier Ballast
28	470KΩ	½		BTS-470K	Y1.-V1.-Y1. Line Isolation-See Note

Note - Not used in all models.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
29	1800Ω	3.3Ω	180Ω	.6Ω		A-3876	T22S45		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CORONADO PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-108		
30	PM	3.3Ω		Mod. P6-X		
	CONE DIA.	VC DIA.				
31	5-1/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

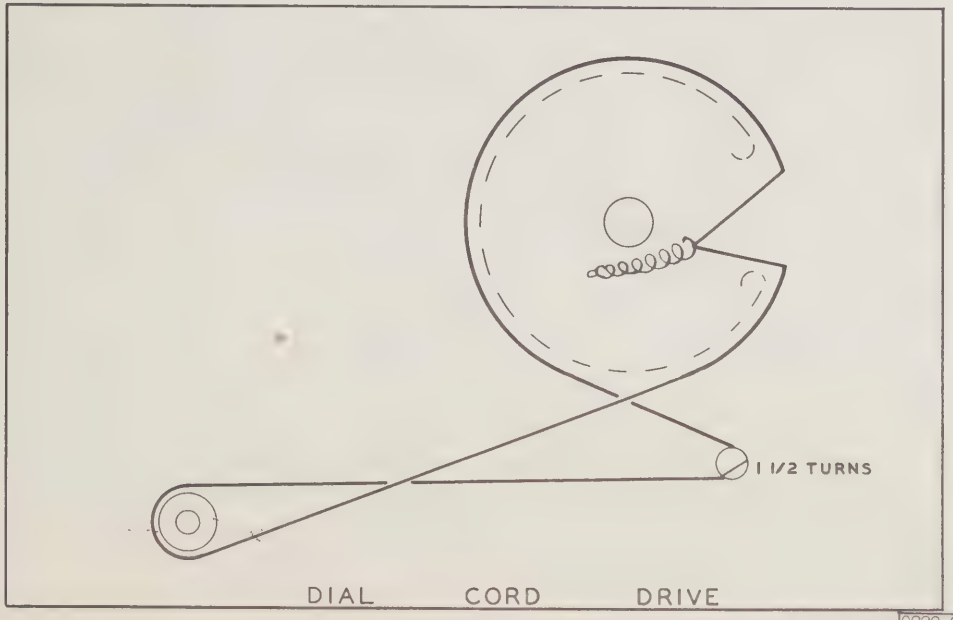
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	
32	Loop Ant.	.1Ω	1Ω			
33	Osc. Coil		4Ω		14-1040	Add 50MMFD from grid to high side tuning cap.
34	Input IF	18Ω	18Ω		16-6658	
35	Output IF	19Ω	19Ω		16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CORONADO PART No.		
36	Bayonet	7.5	0.20	White			Type 51

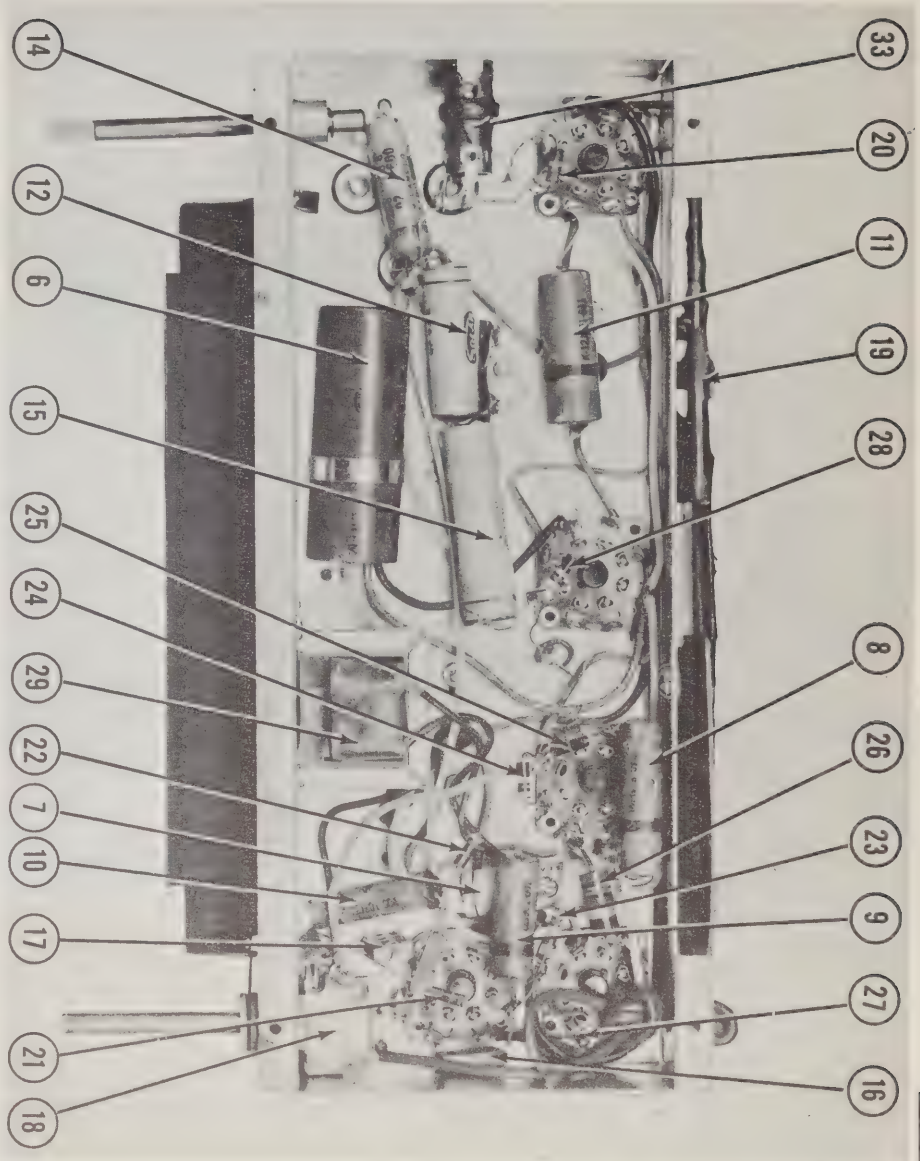
MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
37	2 Gang Var. Cap		19-467 MMF, 32-199 MMF

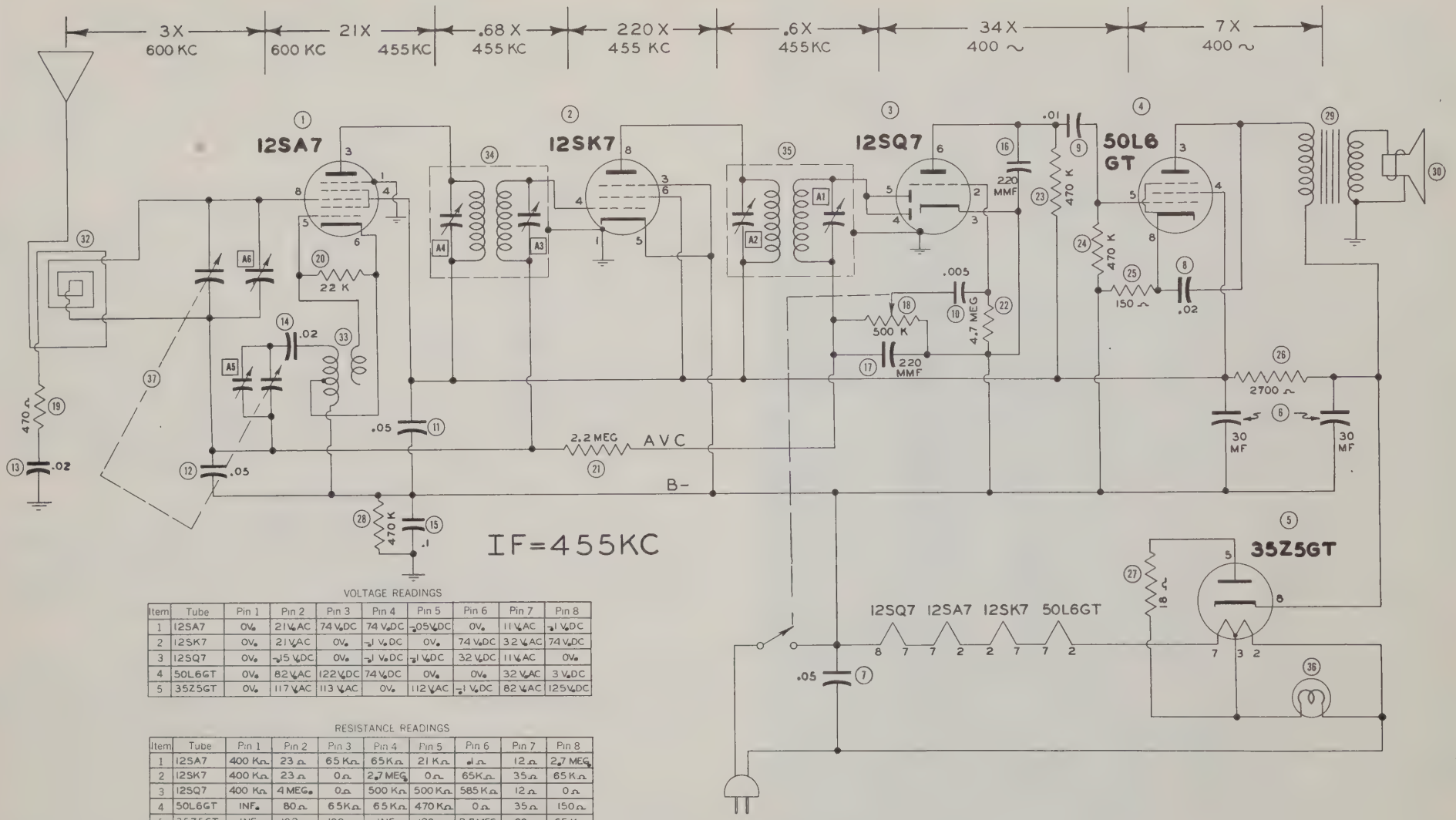


CORONADO
MODEL 43-8330

CHASSIS—BOTTOM VIEW



CORONADO
MODEL 43-8330



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	21V AC	74V DC	74V DC	-.05V DC	0V.	11V AC	-1V DC
2	12SK7	0V.	21V AC	0V.	-1V DC	0V.	74V DC	32V AC	74V DC
3	12SQ7	0V.	-15V DC	0V.	-1V DC	-1V DC	32V DC	11V AC	0V.
4	50L6GT	0V.	82V AC	122V DC	74V DC	0V.	0V.	32V AC	3V DC
5	35Z5GT	0V.	117V AC	113V AC	0V.	112V AC	-1V DC	82V AC	125V DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	400 KΩ	23 Ω	65 KΩ	65 KΩ	21 KΩ	1 Ω	12 Ω	2.7 MEG.
2	12SK7	400 KΩ	23 Ω	0 Ω	2.7 MEG.	0 Ω	65 KΩ	35 Ω	65 KΩ
3	12SQ7	400 KΩ	4 MEG.	0 Ω	500 KΩ	500 KΩ	585 KΩ	12 Ω	0 Ω
4	50L6GT	INF.	80 Ω	65 KΩ	65 KΩ	470 KΩ	0 Ω	35 Ω	150 Ω
5	35Z5GT	INF.	102 Ω	100 Ω	INF.	120 Ω	2.7 MEG.	80 Ω	65 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

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479-12

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

DECCA MODEL DP-29

TRADE NAME	Decca, Model DP-29
MANUFACTURER	Steelman Radio Corp., 742 Tremont Ave., Bronx 57, N.Y.
TYPE SET	AC Operated Phonograph with 3 Tube Amplifier & Speaker
TUBES (THREE)	Types, 6SL7GT or 7F7 AF Amp., 6V6GT or 7C5 Power Output, 6X5GT or 7Y4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .360 @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SL7GT	0V.	275V.DC	29 V.DC	0V.	165V.DC	165V.DC	6.4V.AC	0V.
2	6V6GT	0V.	0V.	315V.DC	330V.DC	0V.	275V.DC	6.4V.AC	175V.DC
3	6X5GT	0V.	0V.	310V.AC	0V.	310V.AC	0V.	6.4V.AC	350V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SL7GT	750KΩ	160KΩ	2KΩ	490KΩ	310KΩ	2KΩ	.1Ω	0Ω
2	6V6GT	INF.	0Ω	110KΩ	110KΩ	850KΩ	160KΩ	.1Ω	280Ω
3	6X5GT	INF.	0Ω	320Ω	INF.	340Ω	INF.	.1Ω	110KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

DECCA
MODEL DP-29

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		DECCA PART No.	STANDARD REPLACEMENT		
1A	AF Amp.	6SL7GT	6SL7GT	8BD	
B	" "	7F7	7F7	8AC	
2A	Power Output	6V6GT	6V6GT	7AC	
B	" "	7C5	7C5	6AA	
3A	Rectifier	6X5GT	6X5GT	6S	
B	"	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DECCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
4A	30	300			UP6CJ20†	FP331	DY-313	EL-323	■ Filter
B	25	300							▲ "
C	20	25			BR202A				Cath. Bypass
5	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	Line Filter
6	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	" "
7	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
8	.0015	600		684-002	DT6D2	TP405	S-6-002	TC-22	" "
9	80	500							Tone Compensation *

*May be 150MMFD in some models.
†Parallel sections for desired capacity.

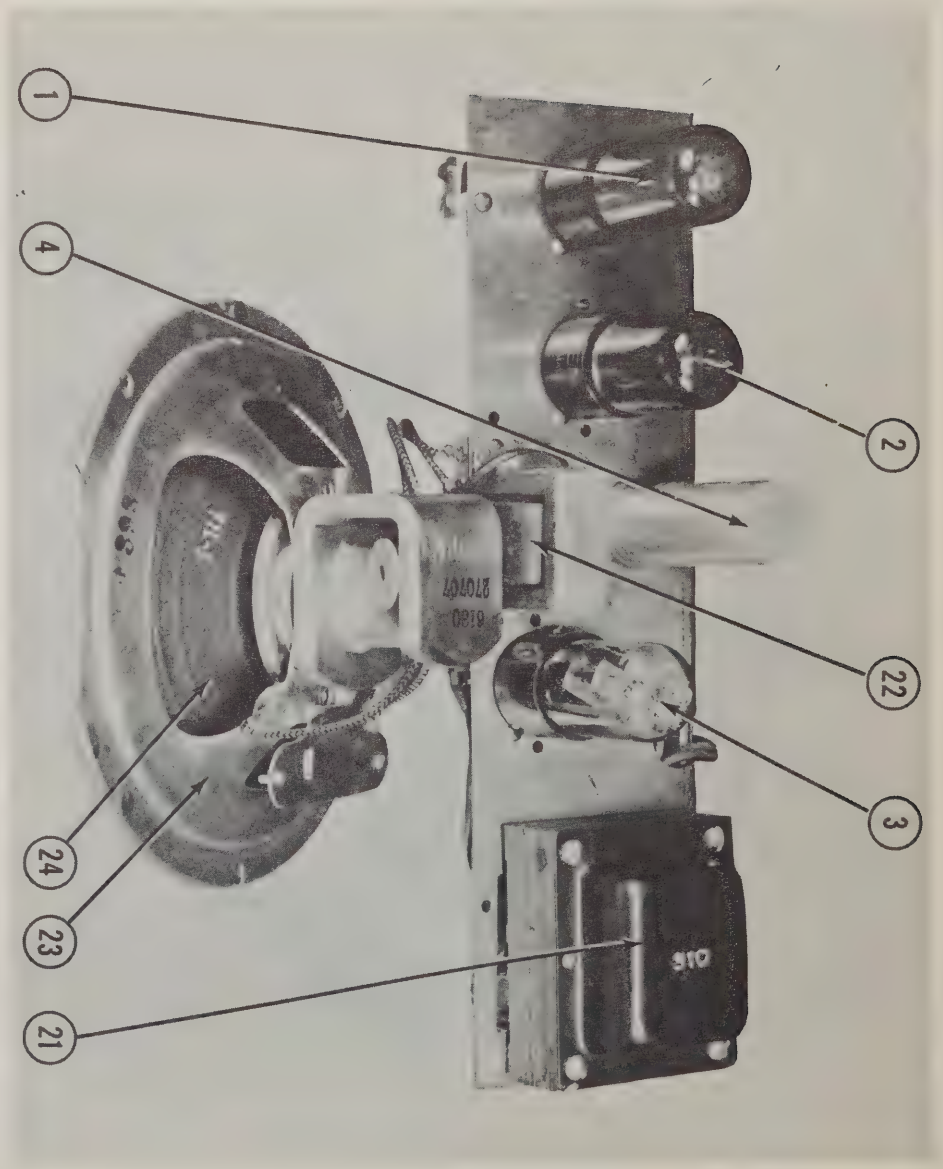
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	DECCA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
10A	1 Meg.	1		MR53	D13-137	M-63-Z	Volume Control-Used in later prod.
B	Shaft			Not Req.	A	Not Req.	Attach to 25A per instructions
10A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control-Used in early prod.
B	Shaft			Not Req.	A	Not Req.	Attach to 25A per instructions
11A	500KΩ	1		MR48	D13-133	M-60-Z	Tone Control-Used in later prod.
B	Shaft			Not Req.	A	Not Req.	Attach to 26A per instructions
C	Switch			M26	41	SW-A	" " " "
11A	250KΩ	1		MR44	D13-130	M-64-Z	Tone Control-Used in early prod.
B	Shaft	1		Not Req.	A	Not Req.	Attach to 26A per instructions
C	Switch			M26	41	SW-A	" " " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DECCA PART No.	IRC PART No.	
12	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. Tone Compensation
13	820KΩ	½		BTS-820K	Gray-Red-Yl. AF Grid
14	2200Ω	½		BTS-2200	Red-Red-Red AF Cathode
15	2200Ω	½		BTS-2200	Red-Red-Red AF Cathode
16	51KΩ	1		BTA-47K	Grn.-Br.-Or. AF Plate Load
17	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
18	820KΩ	½		BTS-820K	Gray-Red-Yl. Feedback
19	300Ω	1		BW-1-330	Or.-Blk.-Br. Output Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	DECCA PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
20	.056A	250Ω	3 Henries		C-1709 §	T20C53 §	§ Drill one new mounting hole.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	DECCA PART No.	STANCOR PART No.	THORDARSON PART No.	
21	117V AC @ .36A	620V CT @ .056A	6.4V AC @ 1.2A			P-6119	T22R02	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DECCA PART No.	JENSEN PART No.		
23	FIELD PM	VC IMP. 3.2Ω	SPEAKER HAS	SPECIAL CHARACTERISTICS - ORDER FROM MANUFACTURER		
24	CONE DIA. 6"	VC DIA. 1/2"				

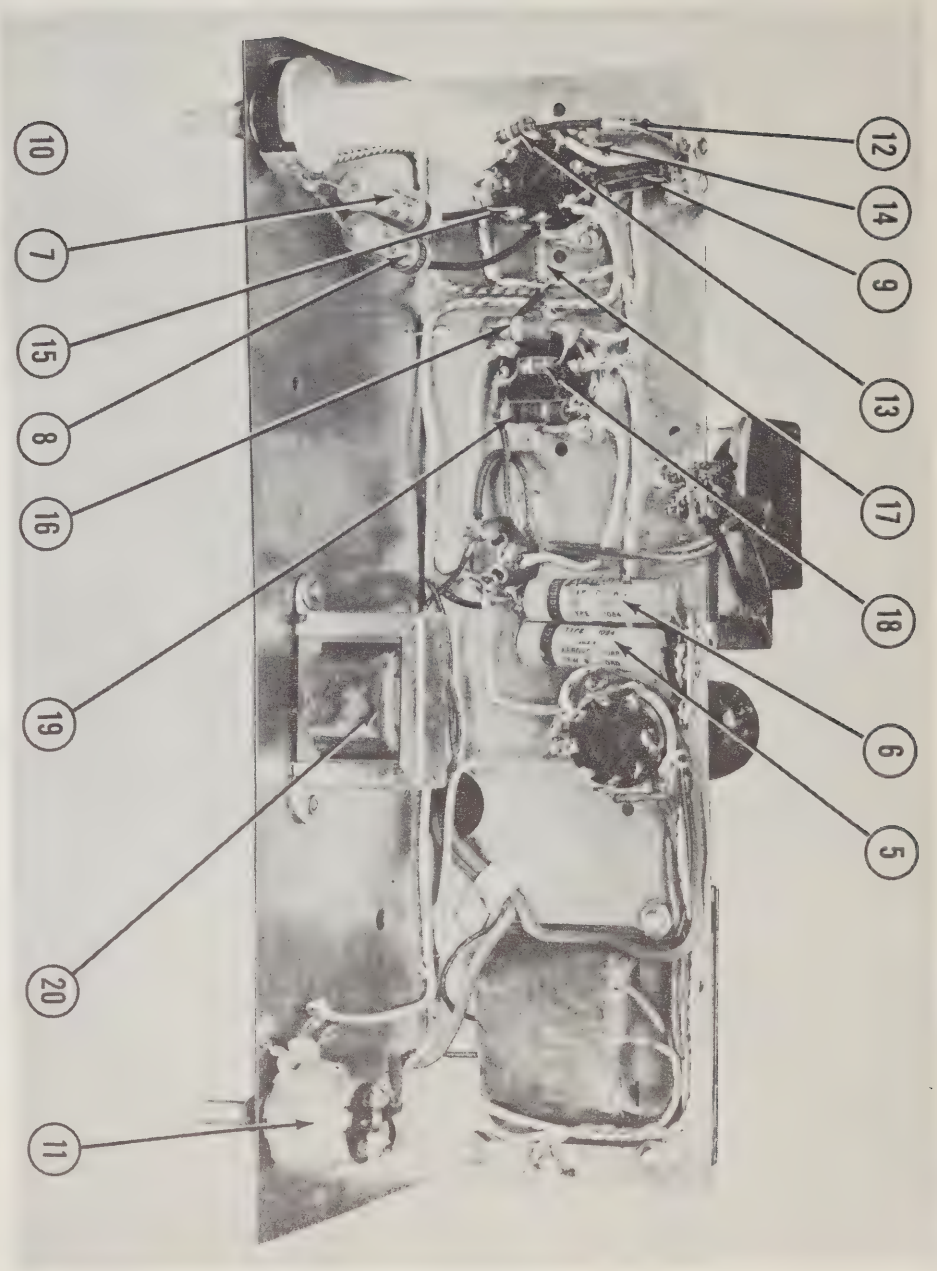
MISCELLANEOUS

ITEM No.	PART NAME	DECCA PART No.	NOTES
	Phono Crystal		Astatic Type L-72A

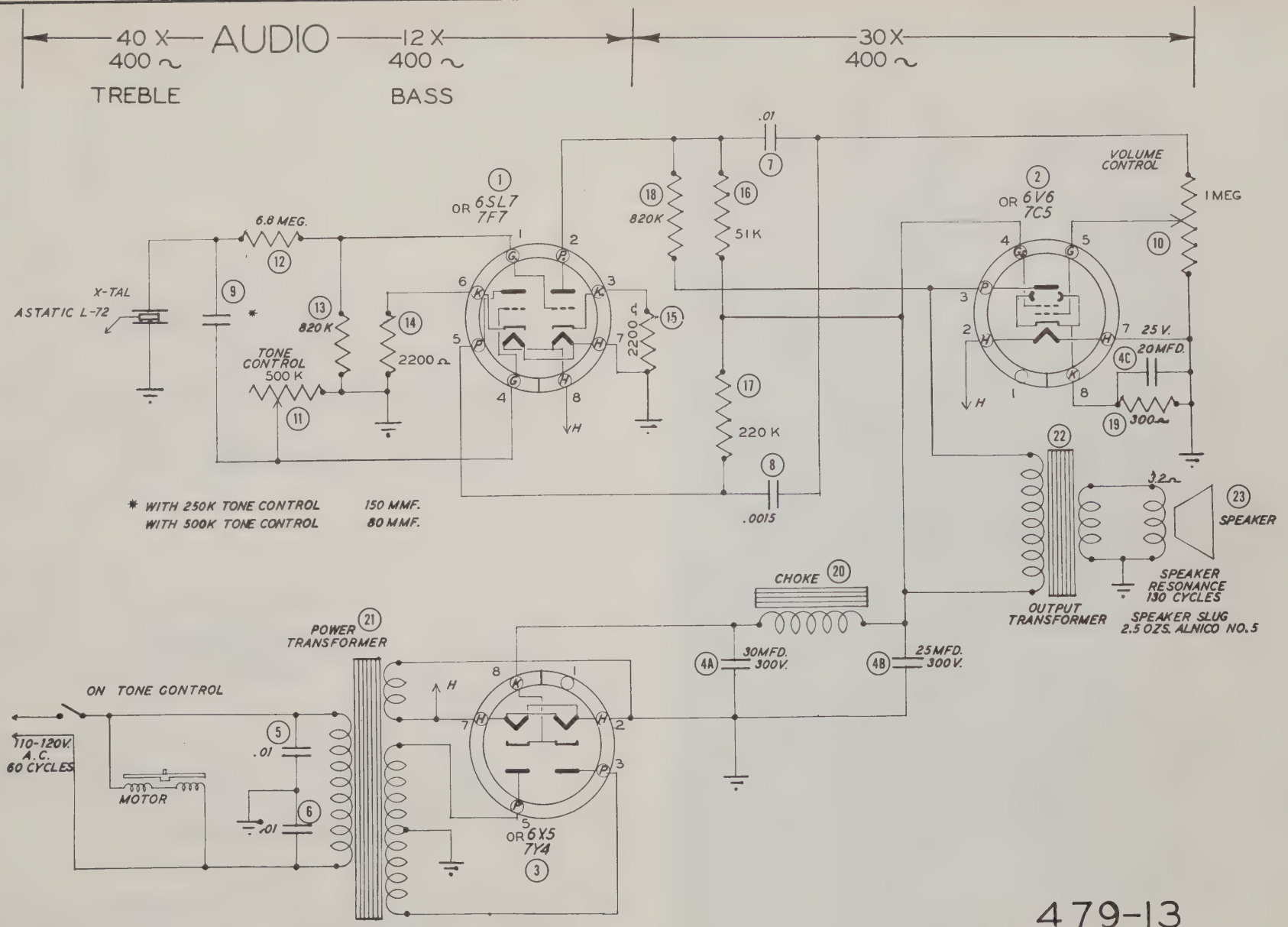
DISASSEMBLY INSTRUCTIONS

1. Remove four wood screws holding bottom cover to cabinet. Remove cover.
2. Loosen set screws in two control knobs. Remove knobs.
3. Unsolder phono pick-up leads.
4. Unsolder phono-motor leads.
5. Remove three hex nuts holding chassis to cabinet.
6. Remove two hex nuts holding speaker mounting board to cabinet. Remove speaker mounting board.

CHASSIS—BOTTOM VIEW



DECCA MODEL DP-29



479-13

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DETROLA CHASSIS MODEL 582

TRADE NAME	Detrola, Chassis Model 582
MANUFACTURER	International Detrola Corp., 1501 Beard St., Detroit, Mich.
TYPE SET	AC Operated Phono-Radio Combination Superheterodyne with Loop Antenna
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING .540 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — **SHORT WAVE** 6-18MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 (grid) of 6SA7. Low side to chassis.	455KC	BC	Tuning cap. fully open.	Across voice coil	A1, A2, A3, A4.	Adjust for maximum output.
2	.1 MFD.	High side to Pin 4 (grid) of 6SK7. RF tube. Low side to chassis.	18.3MC	SW	"	"	A5	" " " "
3	.1 MFD.	"	16MC	"	Tune for maximum output.	"	A6	Rock tuning cap. and adjust for maximum output.
4	400Ω	High side to ant terminal. Low side to chassis.	"	"	"	"	A7	"
5	.1 MFD.	Same as Step 2.	1620KC	BC	Tuning cap. fully open.	"	A8	Adjust for maximum output
6	.1 MFD.	" " " "	1400KC	"	Tune for maximum output.	"	A9	" " " "
7	.1 MFD.	" " " "	600KC	"	"	"	A10	Rock tuning cap and adjust for maximum output. Repeat last three steps. Reinstall in cabinet.
8		Loop	1400KC	"	"	"	A11	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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DETROLA CHASISS MODEL 582

DETROLA CHASISS MODEL 582

PARTS LIST AND DESCRIPTIONS

DETROLA MODEL 582

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		DETROLA PART No.	STANDARD REPLACEMENT		
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DETROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7A	15	400	A51356	AF44J	UP6BJ38	FP234	DY-2x20-450	EL-220	■ Filter
B	20	350							▲ " ▪
8	10	250	A51419	PRS250-12	BR1225	TC52	M-10-350	UT-122	
9	.05	400	BD410503	484-05	DT4S5	TP426	S-4-05	TC-15	Line Bypass
10	.05	400	BD410503	484-05	DT4S5	TP426	S-4-05	TC-15	Output Plate Bypass
11	.02	400	BD410203	484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
12	.1	400	BD410104	484-.1	DT4P1	TP428	S-4-1	TC-1	Audio Plate Decoup.
13	.01	400	BD410103	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
14	.05	200	BD210503	484-05	DT4S5	TP426	S-4-05	TC-15	Tone Compensation
15	.05	400	BD410503	484-05	DT4S5	TP426	S-4-05	TC-15	IF Plate Decoupling
16	.05	400	BD410503	484-05	DT4S5	TP426	S-4-05	TC-15	Conv. Screen Bypass
17	.05	200	BD210503	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
18	.1	400	BD410104	484-.1	DT4P1	TP428	S-4-1	TC-1	Screen Bypass
19	.05	200	BD210503	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
20	.002	600	BD610202	684-002	DT6D2	TP405	S-6-002	TC-22	Ext. Ant. Isolation
21	220	500	BM78A221	1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Audio Plate Bypass
22	100	500	BM78A101	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Tone Compensation
23	5100	500	BM58D512						Fixed Padder
24	100	500	BM78A101	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Osc. Grid Capacitor

CONTROLS

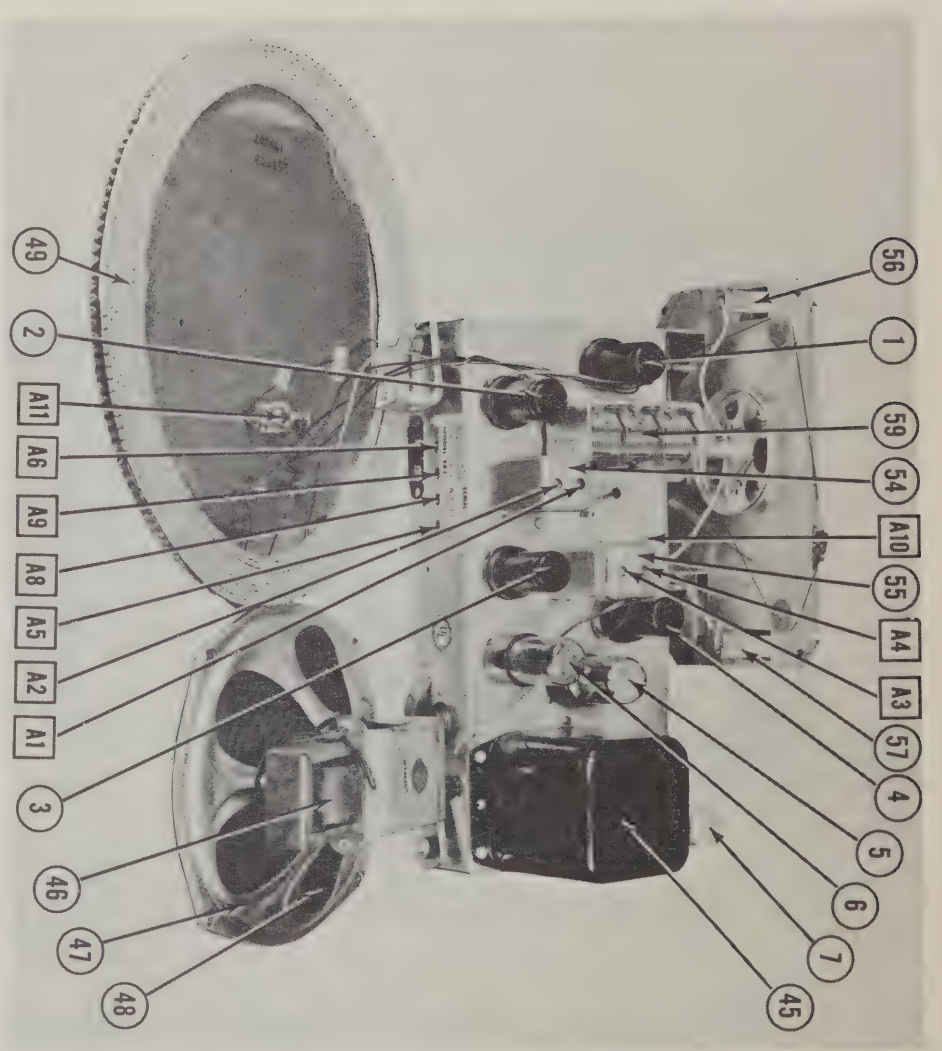
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	DETROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
25A	500KΩ	1	B-51445	TM233	D18-133X	AT-88	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 25A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DETROLA PART No.	IRC PART No.	
26	100KΩ	½	BR17B104	BTS-100K	Br.-Blk.-Yl. AVC Network
27	6.8 Meg.	½	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. RF Grid
28	2200Ω	1	BR17E222	BTA-2200	Red-Red-Red Voltage Dropping
29	1000Ω	½	BR17B102	BTS-1000	Br.-Blk.-Red RF Coil Shunt
30	22KΩ	½	BR17B223	BTS-22K	Red-Red-Or. Oscillator Grid
31	15Ω	½	BR17B150	BW-½-15	Br.-Grn.-Blk. Parasitic Suppressor
32	15 Meg.	½	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
33	1 Meg.	½	BR17B105	BTS-1 Meg.	Br.-Blk.-Grn. Parasitic Suppressor-See Note
34	15KΩ	2	BR17G153	BT-2-15K	Br.-Grn.-Or. Converter Screen Dropping
35	22KΩ	1	BR17E223	BTA-22K	Red-Red-Or. Screen Dropping
36	3.3 Meg.	½	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
37	1000Ω	½	BR17B102	BTS-1000	Br.-Blk.-Red IF Plate Decoupling
38	10KΩ	½	BR17B103	BTS-10K	Br.-Blk.-Or. Tone Compensation
39	6.8 Meg.	½	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
40	220KΩ	½	BR17B224	BTS-220K	Red-Red-Yl. AF Plate Load
41	100KΩ	½	BR17B104	BTS-100K	Br.-Blk.-Yl. AF Plate Decoupling
42	470KΩ	½	BR17B474	BTS-470K	Yl.-Vi.-Yl. Output Grid
43	390Ω	1	BR16E391	BW-1-390	Or.-White-Br. Output Cathode
44	15KΩ	½	BR17B153	BTS-15K	Br.-Grn.-Or. Tone Compensation

Note-Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	DETROLA PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
45	117V AC @ .54A	600V CT @ .077A	5.1V AC @ 1.8A	6.3V AC @ 2.1A	C-51421	P-6312*	T22R04*	*Use universal mounting brackets.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DETROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
46	5800Ω	2.9Ω	500Ω	.3Ω		A-3823			

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DETROLA PART No.	JENSEN PART No.		
	FIELD RES.	VC IMP.				
47	480Ω	2.9Ω	C-51961			
	CONE DIA.	VC DIA.				
48	7-3/8"	11/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	DETROLA PART No.	MEISSNER PART No.	
49	Loop Ant.	.1Ω	.8Ω	D-51973		
50	Loop Loading Coil		4Ω	B-51968		
51	SW Ant. Coil	.5Ω	0Ω	B-51430	14-1044	Items 52A & 52B wound on same form.
52A	BC RF Coil	36Ω	9Ω	B-51425		
52B	SW " "		1.3Ω	0Ω		
53A	BC Osc. Coil	1Ω	6.1Ω	B-51420		Items 53A & 53B wound on same form.
53B	SW Osc. Coil		0Ω			
54	Input IF	27.5Ω	22Ω	B-51416-1	16-6658	
55	Output IF	28Ω		B-51417-1	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					DETROLA PART No.		
56	Bayonet	6-8	0.25	Blue	A-9285		Type 44
57	"	"	"	"	"		"

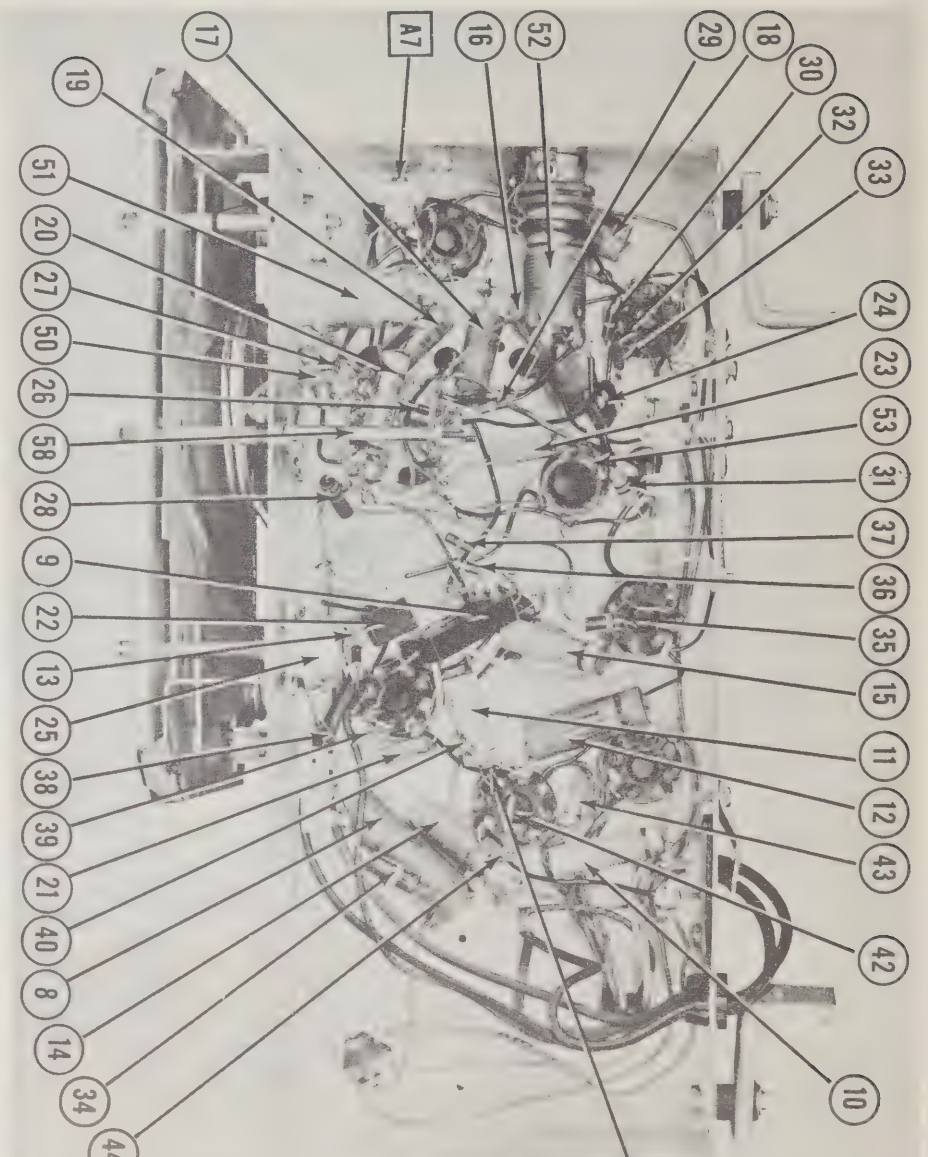
MISCELLANEOUS

ITEM No.	PART NAME	DETROLA PART No.	NOTES
58	Bandswitch	B-51952-1	
59	3 Gang Var. Cap	C-51401-2	18-467 MMF (each section)
A5	Trimmer Strip	A-51656	SW Osc. Adj.
A6			SW RF Adj.
A8			BC Osc. Adj.
A9			BC RF Adj.
A7	Trimmer	A-51657	SW Ant. Adj.
A10	"	A-51423-5	BC Osc. Padder

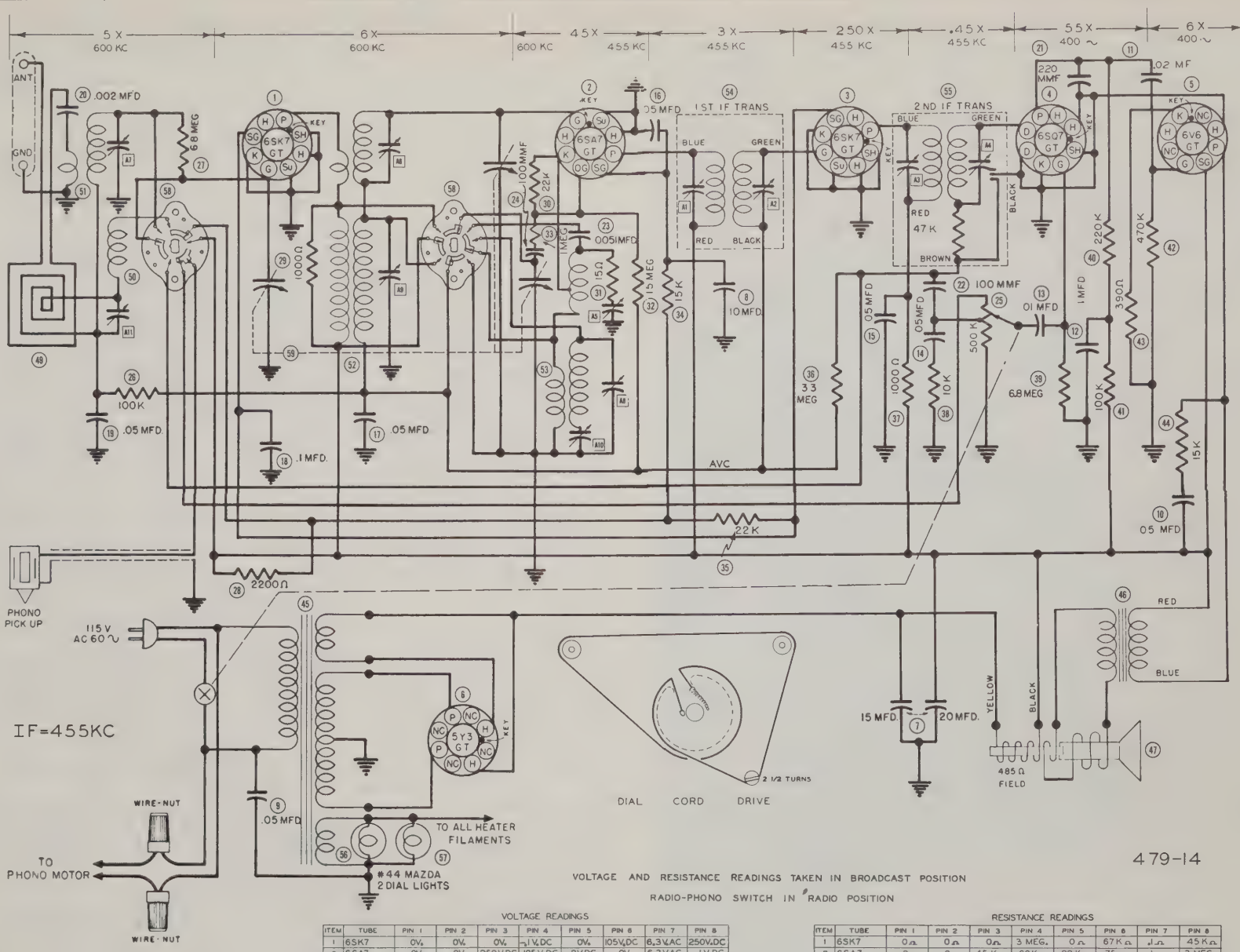
DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs.
2. Remove four Phillips head screws holding cover over bottom of phono compartment. Remove cover.
3. Unsolder phono-pickup leads.
4. Unsolder phono-motor leads.
5. Remove two hex nuts holding loop antenna.
6. Remove two clamps from side of chassis.
7. Remove four hex nuts holding chassis mounting board.
8. Remove chassis mounting board & loop antenna.
9. Remove four hex screws holding chassis to mounting board. Remove chassis.

CHASSIS—BOTTOM VIEW



DETROLA MODEL 582



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION

RADIO-PHONO SWITCH IN "RADIO" POSITION

VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	6SK7	0V.	0V.	0V.	-1V.DC	0V.	105V.DC	6.3V.AC	250V.DC
2	6SA7	0V.	0V.	250V.DC	105V.DC	-2V.DC	0V.	6.3V.AC	-1V.DC
3	6SK7	0V.	0V.	0V.	-1V.DC	0V.	105V.DC	6.3V.AC	240V.DC
4	6SQ7	0V.	-6V.DC	0V.	0V.	-25V.DC	105V.DC	6.3V.AC	0V.
5	6V6GT	230V.DC	0V.	230V.DC	250V.DC	0V.	205V.DC	6.3V.AC	15V.DC
6	5Y3GT	0V.	300V.DC	0V.	300V.AC	0V.	300V.AC	0V.	300V.DC

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	6SK7	0Ω	0Ω	0Ω	3 MEG.	0Ω	67KΩ	.1Ω	45KΩ
2	6SA7	0Ω	0Ω	45KΩ	60KΩ	22KΩ	.75Ω	.1Ω	3 MEG.
3	6SK7	0Ω	0Ω	0Ω	3 MEG.	0Ω	67KΩ	.1Ω	45KΩ
4	6SQ7	0Ω	6 MEG.	0Ω	0Ω	480KΩ	265KΩ	.1Ω	0Ω
5	6V6GT	60KΩ	0Ω	45KΩ	45KΩ	450KΩ	145KΩ	.1Ω	350Ω
6	5Y3GT	0Ω	45KΩ	INF.	110Ω	0Ω	100Ω	INF.	45KΩ

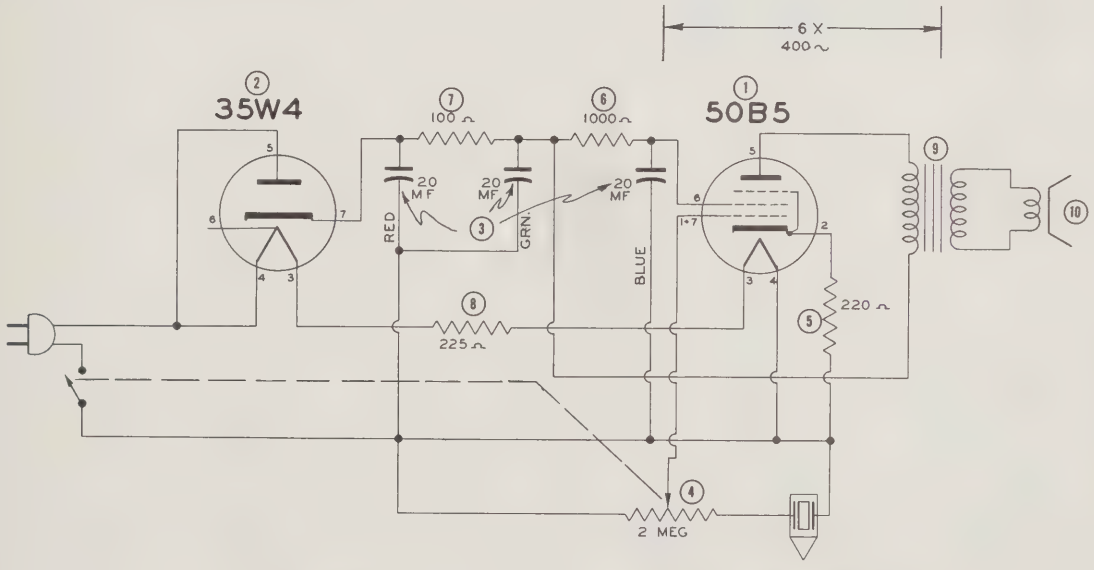
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DUOSONIC
MODELS K1, K2

DUOSONIC MODEL K2

TRADE NAME	Duosonic, Models K1, K2
MANUFACTURER	Duosonic Radio Corp., 700 Elton Ave., Bronx 55, N.Y.
TYPE SET	AC Operated Phonograph with 2 Tube Amplifier & Speaker
TUBES (TWO)	Types, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .240 Amp. @ 117 Volts



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	50B5	0V.	97 VDC	50 VAC	0V.	125 VDC	130 VDC	0V.
2	35W4	130 VDC	0V.	84 VAC	117 VAC	117 VAC	110 VAC	137 VDC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	50B5	1.8 MEG.	200 Ω	43 Ω	0 Ω	35 KΩ	35 KΩ	1.8 MEG.
2	35W4	35 KΩ	INF.	250 Ω	270 Ω	270 Ω	260 Ω	35 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-15

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DUOSONIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	50B5	50B5	7BZ	
2	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DUOSONIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	20	150		PRSA150-20-20	EZ42215	TN129	DSB-3x20-150	TA-303	Filter - Red
B	20	150							" - Green
C	20	150		PRS150-20					" - Blue

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DUOSONIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
4A	2 Meg.	1		MR55	D13-139	M-66-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 4A per instruction
C	Switch			M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DUOSONIC PART No.	IRC PART No.	IDENTIFICATION CODES
5	220Ω	½		BW-½-220	Red-Red-Br. Output Cathode
6	1000Ω	½		BTS-1000	Br.-Blk.-Red Filter
7	100Ω	½		BW-½-100	Br.-Blk.-Br. "
8	225Ω	10		ABA-225	Line Dropping-See Note

Note-On IRC replacement set slider at 225Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DUOSONIC PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
9	1600Ω	3.1Ω	110Ω	.7Ω		A-3865*	T22845*		*Bend mounting tabs down, file out slots and mount on original bracket.

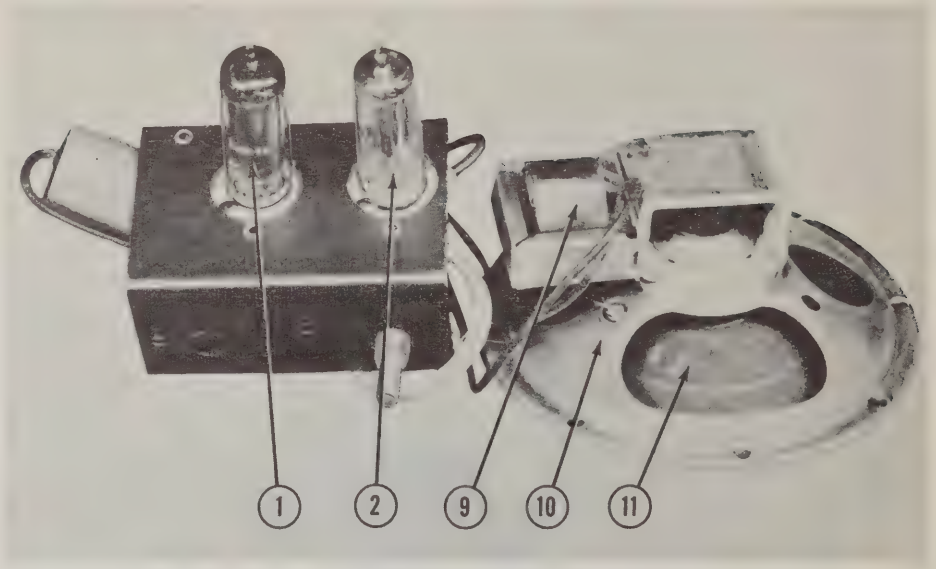
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: DUOSONIC PART No.	JENSEN PART No.		INSTALLATION NOTES
10	FIELD	VC IMP.		ST-105		
	PM	3.1Ω		Mod. P5-X		
11	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	4-3/4"	1/2"				

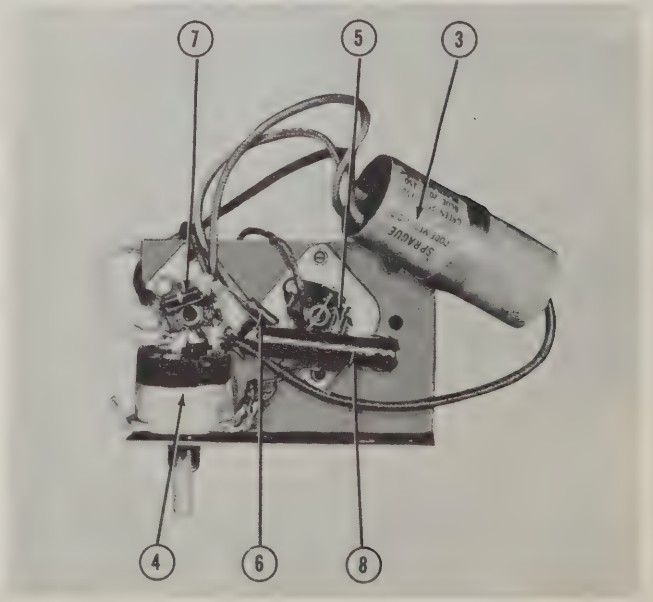
DISASSEMBLY INSTRUCTIONS

1. Remove four hex head screws holding phono & chassis mounting board in chassis.
2. Loosen set screw and remove one control knob. Remove mounting board.
3. Remove lock nut holding control shaft through mounting board.
4. Remove two bolts holding speaker to cabinet. Remove speaker.
5. Unsolder phono-motor leads from chassis.
6. Unsolder phono-pickup leads from chassis.

CHASSIS—TOP VIEW

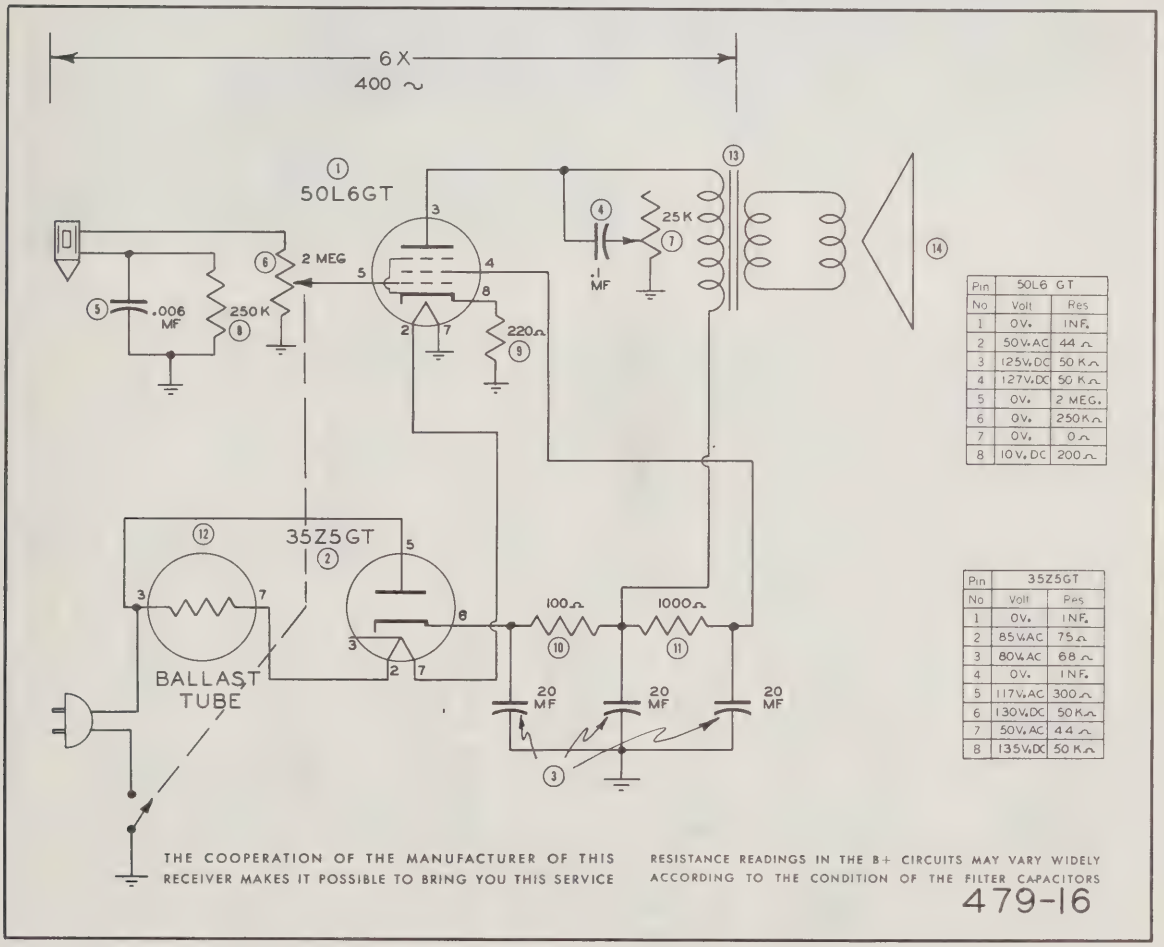


CHASSIS—BOTTOM VIEW



DUOSONIC MODEL K3

TRADE NAME	Duosonic, Models K3, K4
MANUFACTURER	Duosonic Radio Corp., 700 Elton Ave., Bronx 55, N.Y.
TYPE SET	AC Operated Phonograph with 2 Tube Amplifier and Speaker
TUBES (TWO)	Types, 50L6GT Power Output, 35Z5GT Rectifier (Model K3 uses Ballast Tube)
POWER SUPPLY	110-120 Volts AC RATING .220 Amp. @ 117 Volts AC



Pin No	50L6 GT Volt	Res
1	0V.	INF.
2	50V.AC	44 Ω
3	125V.DC	50 KΩ
4	127V.DC	50 KΩ
5	0V.	2 MEG.
6	0V.	250KΩ
7	0V.	0Ω
8	10V.DC	200Ω

Pin No	35Z5GT Volt	Res
1	0V.	INF.
2	85VAC	75Ω
3	80V.AC	68Ω
4	0V.	INF.
5	117V.AC	300Ω
6	130V.DC	50KΩ
7	50V.AC	44Ω
8	135V.DC	50 KΩ

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

HOWARD W. SAMS & CO., INC. **Indianapolis . Indiana**

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: DUOSONIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	50L6GT	50L6GT	7AC	
2	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DUOSONIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	20	150		PRSA150-20-20	EZ42215	TN129	DSB-3x20-150	TA-303	Filter - Red
B	20	150							" - Blue
C	20	150		PRS150-20					" - Green
4	.1	400		484-.1	DT4P1	TP429	S-4-1	TC-1	Tone Compensation
5	.006	600		684-006	DT6D6	TP409	S-6-006	TC-26	" "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DUOSONIC PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
6A	2 Meg.	1		MR55	D13-137	M-66-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 6A per instructions
C	Switch			M26	41	SW-A	" " " "
7A	25KΩ	1		MR29	D11-120	M-40-S	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 7A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DUOSONIC PART No.	IRC PART No.	IDENTIFICATION CODES
8	250KΩ	½		BTS-220K	Red-Grn.-Yl. Phono Shunt
9	220Ω	½		BW-½-220	Red-Red-Br. Output Cathode
10	100Ω	½		BW-½-100	Br.-Blk.-Br. Filter
11	1000Ω	½		BTS-1000	Br.-Blk.-Red Filter
12	220Ω				Filament Dropping (Ballast)†

†Model K4 uses 225Ω 10W resistor instead of ballast tube.

TRANSFORMER (OUTPUT)

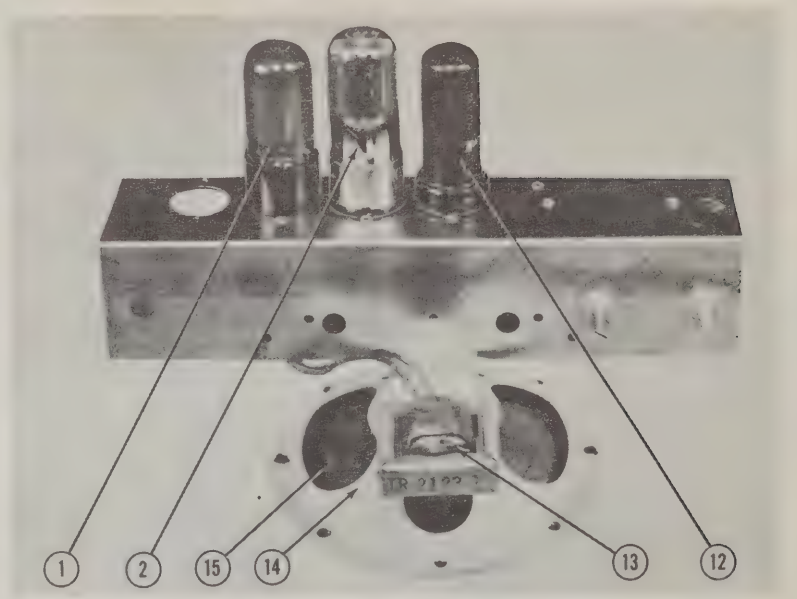
ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DUOSONIC PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
13	1500Ω	2.8Ω	140Ω	.5Ω		A-3865*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

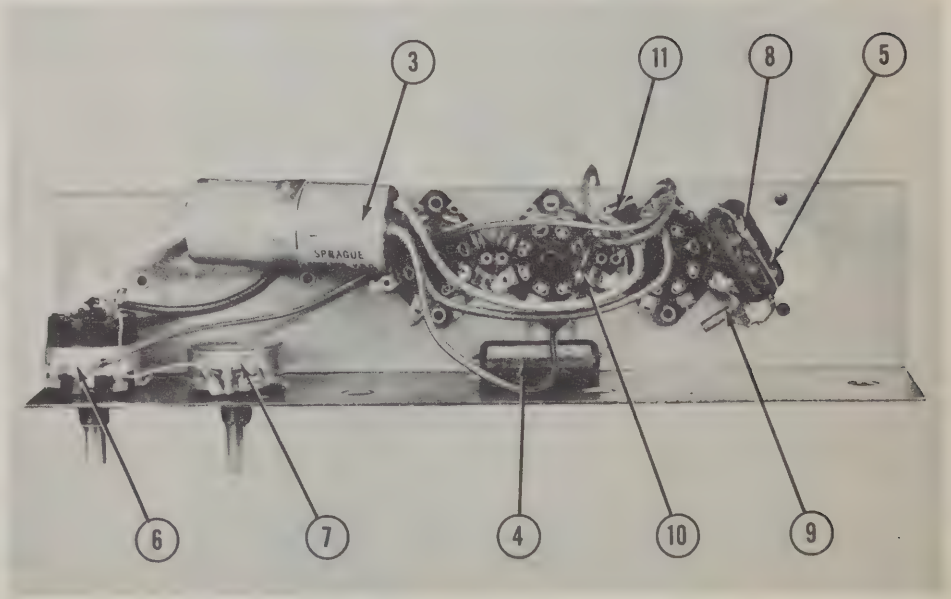
ITEM No.	RATINGS		REPLACEMENT DATA: DUOSONIC PART No.	JENSEN PART No.		INSTALLATION NOTES
14	FIELD: PM	VC IMP.: 2.8Ω		ST-105 Mod. P5-X		
15	CONE DIA.: 4-3/4"	VC DIA.: 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

DISASSEMBLY INSTRUCTIONS
1. Loosen set screws and remove two control knobs.
2. Remove four hex head screws holding phono mounting board in cabinet.
3. Remove mounting board.
4. Remove one hex nut holding chassis to mounting board. Remove chassis.
5. Remove two bolts holding speaker to cabinet. Remove speaker.
6. Unsolder phono-motor leads from chassis.
7. Unsolder phono-pickup leads from chassis.

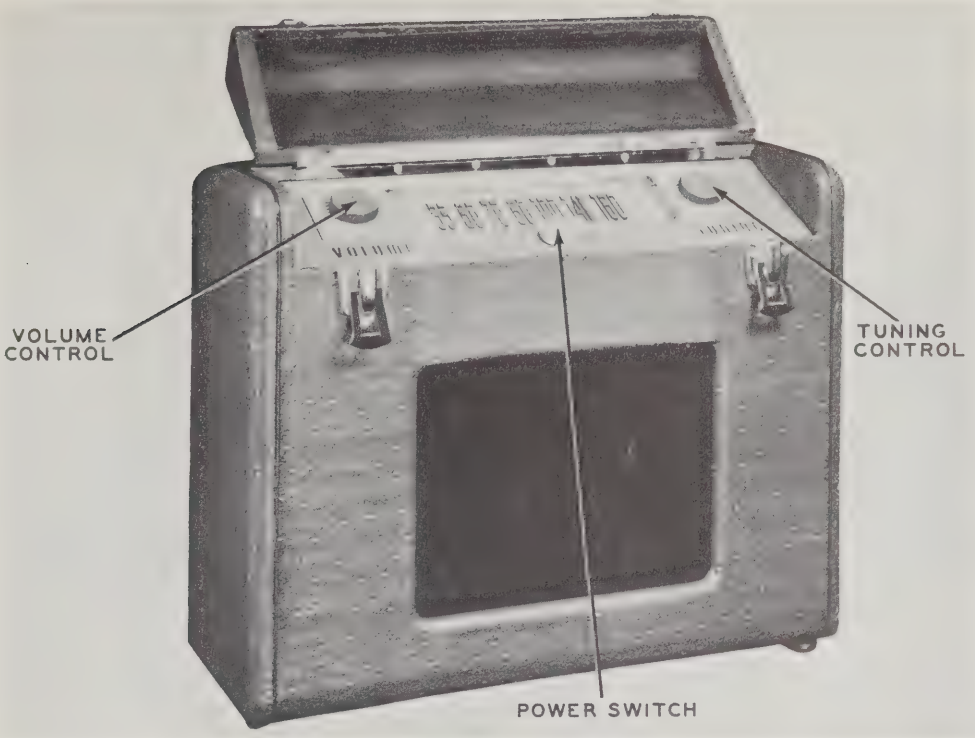
CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



FIRESTONE (AIR CHIEF) MODEL
4-C-3, 4-C-6 (BATTERY OPERATED)



AIR CHIEF MODEL 4-C-3

TRADE NAME	Firestone (Air Chief) Models 4-C-3, 4-C-6
SUPPLIER	The Firestone Tire & Rubber Co., 1200 Firestone Pkwy., Akron, Ohio
TYPE SET	Three Power Portable Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier.
POWER SUPPLY RATING	110-120 Volts AC-DC or 9 Volt "A" Supply & 90 Volt "B" Supply .190 Amp. ⓐ 117 Volts AC or 55 MA ⓐ 9.2 Volts DC & 15 MA ⓐ 90 Volts DC
TUNING RANGE—BROADCAST	530-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a capacitor in series with the low side of the signal generator and B-. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.2 MFD.	High side to grid cap. of 1A7. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy ant. to 200 MMF to reduce hum modulation.
2	Direct	Connect a 1 Megohm resistor across the ant. clips on the chassis. Signal generator connected across the 1 Megohm resistor.	1620KC	"	"	A5	Adjust for maximum output.
3	"	"	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output. Remove 1 Megohm resistor and install receiver in cabinet. Reconnect loop.
4		Loop	"	"	"	A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

FIRESTONE (AIR CHIEF)
MODELS 4-C-3, 4-C-5

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCHIEF PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR CHIEF PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	25E11	AF1010D4A	UP9DJ48		DY-419	TA-440	● Filter
B	40	150							■ "
C	40	25						EL-242	▲ Filament Bypass
D	40	25					M-25-25		" "
8	100	25	25E19	PRS25-100	BRH251	TC2501	M-100-25	UHC-102	" " *
9	.05	400	23E416	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
10	.005	400	23E408	484-005	DT6D5	TP408	S-6-005	TC-25	Pwr. Supp. Bypass
11	.003	400	23E406	484-003	DT6D3	TP406	S-6-003	TC-23	Output Plate Bypass
12	.05	200	23E216	484-05	DT4S5	TP426	S-4-05	TC-15	Audio Coupling
13	.05	200	23E216	484-05	DT4S5	TP426	S-4-05	TC-15	Audio Plate Decoup.
14	.003	400	23E406	484-003	DT6D3	TP406	S-6-003	TC-23	Audio Coupling
15	.1	200	23E218	484-.1	DT4P1	TP428	S-4-1	TC-1	AVC Filter
16	.05	200	23E216	484-05	DT4S5	TP426	S-4-05	TC-15	IF Grid Filter
17	.5	200	23E224	484-.5	DT4P5	TP431	S-4-5	TC-5	Screen Bypass
18	.1	200	23E218	484-.1	DT4P1	TP428	S-4-1	TC-1	Filament Bypass
19	.1	200	23E218	484-.1	DT4P1	TP428	S-4-1	TC-1	" "
20	.1	200	23E218	484-.1	DT4P1	TP428	S-4-1	TC-1	" "
21	.05	200	23E216	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
22	100	500	23E39	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Audio Plate Bypass
23	100	500	23E39	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Tone Compensation
24	100	500	23E39	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	IF Bypass Diode
25	250	500	23E42	1468-00025	5W5T25	MC240	M0.5-325	1FM-325	Osc. Grid Capacitor

*In early production, the two low voltage sections of filter capacitor (Item 7) shown in dotted lines on schematic, were not used and in their place the 100MFD (Item 8) was used.

CONTROLS

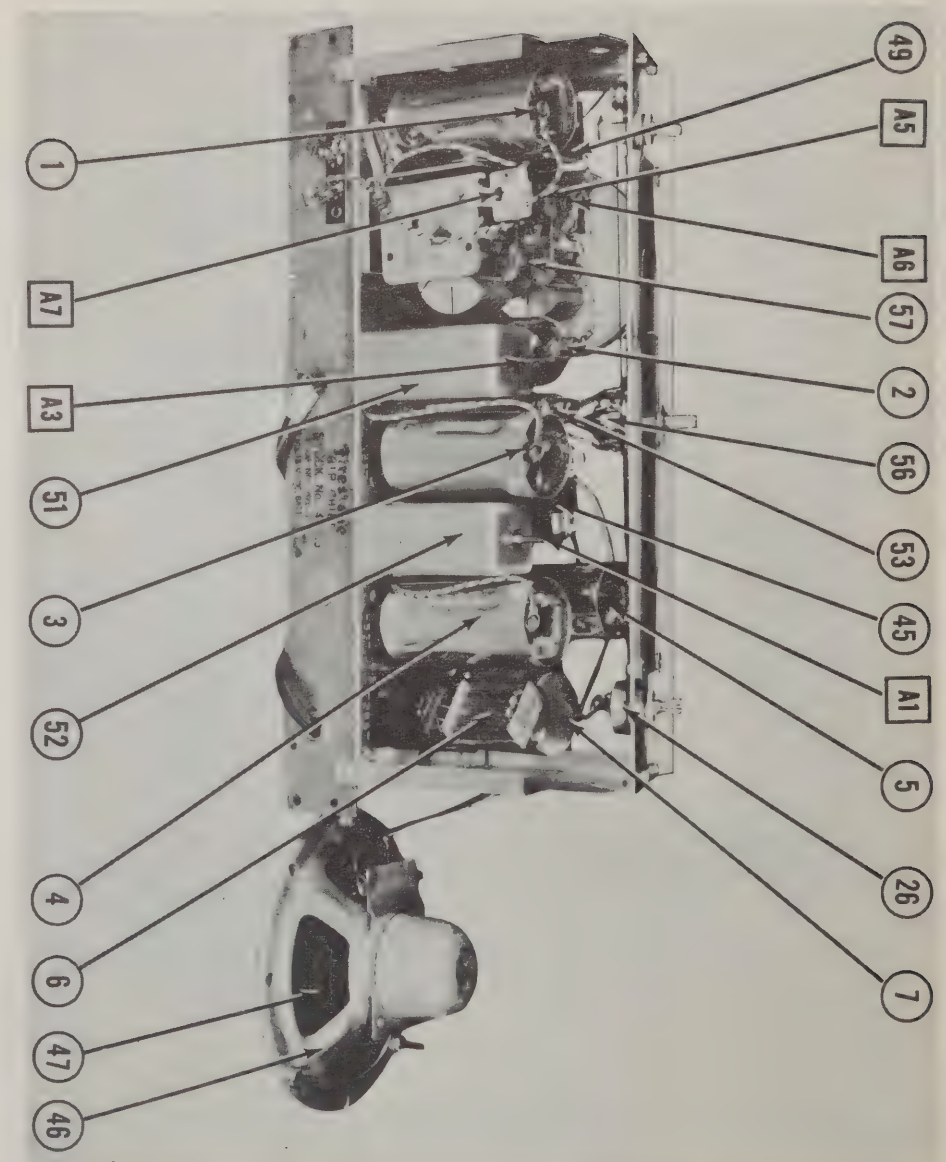
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
26A	500KΩ	1	28E13	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 26A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR CHIEF PART No.	IRC PART No.	IDENTIFICATION CODES
27	6.8 Meg.	½	27E685	BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
28	2.2 Meg.	½	27E225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
29	6.8 Meg.	½	27E685	BTS-6.8 Meg.	Blue-Gray-Grn. " "
30	680Ω	½	27E681	BTS-680	Blue-Gray-Br. Filament String
31	100KΩ	½	27E104	BTS-100K	Br.-Blk.-Yl. Oscillator Grid
32	390Ω	½	27E391	BW-½-390	Or.-White-Br. Filament String
33	1 Meg.	½	27E105	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
34	330KΩ	½	27E334	BTS-330K	Or.-Or.-Yl. IF Grid
35	22KΩ	½	27E223	BTS-22K	Red-Red-Or. Converter Screen Dropping
36	10 Meg.	½	27E106	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
37	680KΩ	½	27E684	BTS-680K	Blue-Gray-Yl. AF Plate Load
38	220KΩ	½	27E224	BTS-220K	Red-Red-Yl. AF Plate Decoupling
39	1 Meg.	½	27E105	BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
40	390Ω	½	27E391	BW-½-390	Or.-White-Br. Filament String
41	680Ω	½	27E681	BTS-680	Blue-Gray-Br. " "
42	1 Meg.	½	27E105	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
43	75Ω	2	27E1001	BW-2-68	Vi.-Grn.-Blk. Pilot Light Shunt
44A	500Ω		27E1000	AB-500	Filter
B	1900Ω			ABA-2000	Filament String-See Note

Note-On IRC replacement set slider 1900Ω from one end.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIR CHIEF PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
45	7400Ω	3.6Ω	820Ω	.4Ω	22E15	A-3878	T22S47		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRCHIEF PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-107		
46	PM	3.6Ω	1E18	Mod. P5-V		
	CONE DIA.	VC DIA.				
47	4-3/4"	1/2"	NOT READILY REPLACEABLE -USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIR CHIEF PART No.	MEISSNER PART No.	
48	Loop Ant.		1Ω	20E120-1		
49	RF Coil	85Ω	2.5Ω	20E48		
50	Osc. Coil	1.5Ω	5Ω	20E237§	14-1040	§Models with letter "B" adjacent to serial number use Osc. Coil Part No. 20E248.
51	Input IF	14.5Ω	14Ω	20E53	16-6666	
52	Output IF	13Ω	13.5Ω	20E54	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					AIR CHIEF PART No.		
53	Bayonet	6.3	0.25	Blue	40E2		Type 44

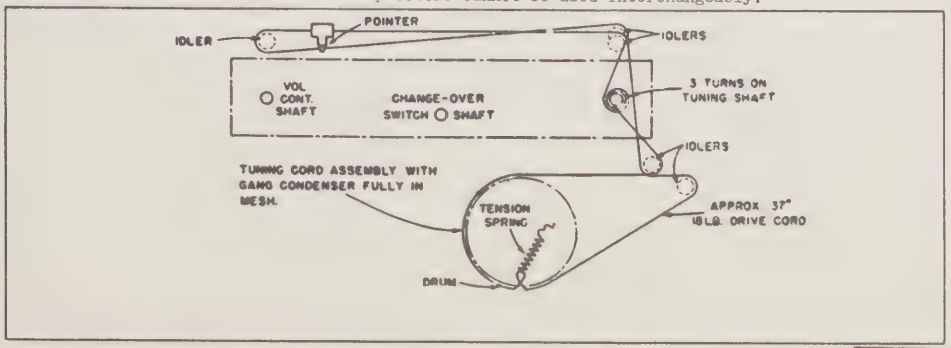
BATTERIES

ITEM No.	VOLTAGE	AIR CHIEF PART No.	EVEREADY			INSTALLATION NOTES
			"A"	"B"	"A-B"	
54	9V "A"	(2) 4-D-86	(2)#746			Two 4½ V. Batteries in Series
55	90V "B"	(2) 4-D-85		(2) #482		" 45 V. " " "

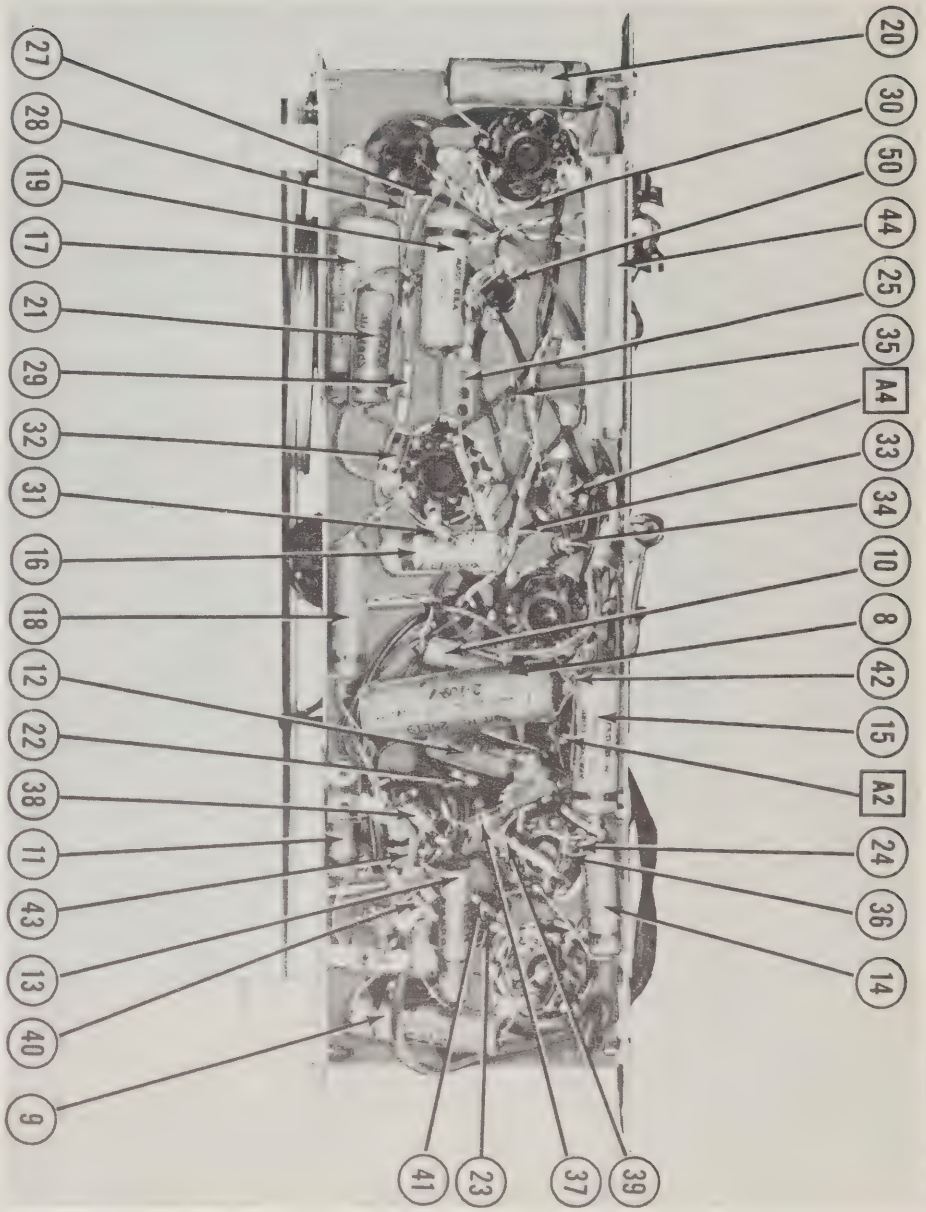
MISCELLANEOUS

ITEM No.	PART NAME	AIR CHIEF PART No.	NOTES
56	Switch	29E10	Power Change-Over 4 Pole 3 Position
57	3 Gang Var. Cap	24E7A†	23-471 MMF, 23-471 MMF, 31-195 MMF
	Dial Scale	36E22	
	Dial Crystal	9E6	
	Dial Pointer	35E20-1	

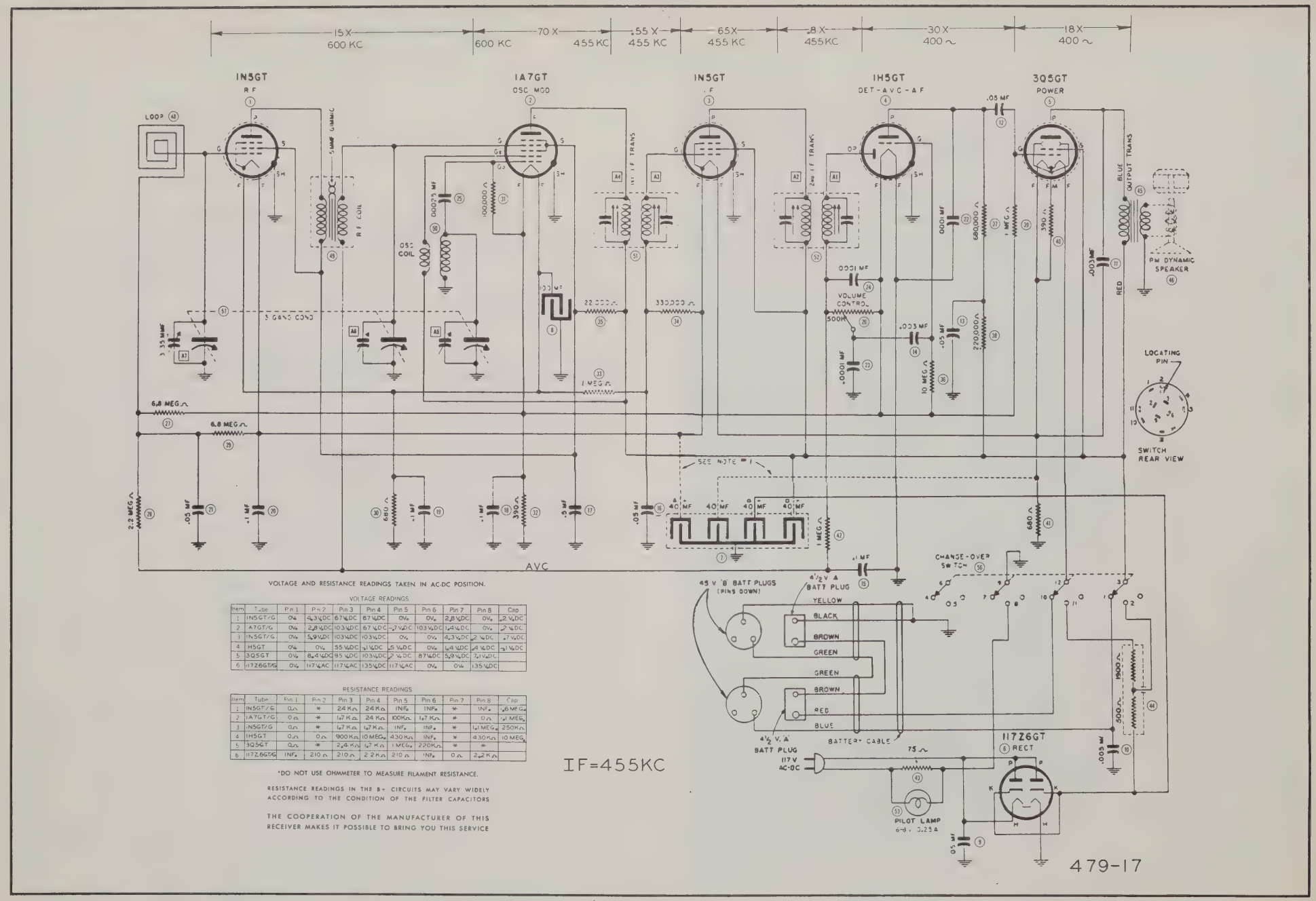
†Variable Cap. Part No. 24E7B use with osc. coil Part No. 20E248.
These coils & variable capacitors cannot be used interchangeably.



CHASSIS—BOTTOM VIEW



FIRESTONE (AIR CHIEF) MODELS 4-C-3, 4-C-5



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT/G	0V.	4.3V.DC	67V.DC	67V.DC	0V.	0V.	2.8V.DC	0V.	.2V.DC
2	A7GT/G	0V.	2.8V.DC	103V.DC	67 V.DC	.7V.DC	103V.DC	1.4V.DC	0V.	.7 V.DC
3	1N5GT/G	0V.	5.9V.DC	103V.DC	103V.DC	0V.	0V.	4.3V.DC	.2 V.DC	.7V.DC
4	1H5GT	0V.	0V.	55 V.DC	3 V.DC	.5 V.DC	0V.	1.4 V.DC	.4 V.DC	.3 V.DC
5	3Q5GT	0V.	8.4 V.DC	95 V.DC	103V.DC	7 V.DC	87V.DC	5.9 V.DC	7.1 V.DC	
6	117Z6GT/G	0V.	117 V.AC	117 V.AC	135 V.DC	117 V.AC	0V.	0V.	135 V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT/G	0 Ω	*	24 KΩ	24 KΩ	1MEG.	1MEG.	*	1MEG.	.6 MEG.
2	1A7GT/G	0 Ω	*	1.7 KΩ	24 KΩ	100KΩ	1.7 KΩ	*	0 Ω	.1 MEG.
3	1N5GT/G	0 Ω	*	1.7 KΩ	1.7 KΩ	1MEG.	1MEG.	*	1.1 MEG.	250KΩ
4	1H5GT	0 Ω	0 Ω	900 KΩ	10 MEG.	430 KΩ	1MEG.	*	430 KΩ	10 MEG.
5	3Q5GT	0 Ω	*	2.4 KΩ	1.7 KΩ	1 MEG.	220KΩ	*	*	
6	117Z6GT/G	1MEG.	210 Ω	210 Ω	2.2 KΩ	210 Ω	1MEG.	0 Ω	2.2 KΩ	

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-17

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to low end of volume control.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volts.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

GLOBE
MODEL 51

GLOBE
MODEL 51

GLOBE MODEL 51

TRADE NAME	Globe, Model 51
MANUFACTURER	Globe Electronics, Inc., 225 W. 17th St., New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	530-1680KC RATING .260 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal gen. and chassis. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to rear stator of tuning cap. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2,	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MMFD	High side to ext. ant. lead. Low side to chassis.	1680KC	"	"	A3	Adjust for maximum output.
3	200MMFD	"	1500KC	Tune for maximum output.	"	A4	" " " "

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PARTS LIST AND DESCRIPTIONS

GLOBE MODEL 51

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GLOBE PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	12SA7GT	6AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GLOBE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	50	150		PRSA150-50-30	BRD3515	2N520	M-5030-150	TA-530	Filter - Red
B	30	150							" - Blue
7	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Line Filter
8	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Output Plate Bypass
9	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
11	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	IF Screen Bypass
12	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	RF Bypass Pwr. Supp.
13	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Bias Filter
14	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
15	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Ext. Ant. Isolation
16	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Audio Plate Bypass
17	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	IF Bypass Vol. Cont.
18	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Osc. Grid Capacitor
19	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	IF Coupling

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GLOBE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
20A	500K	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 20A per instructions
C	Switch			M26	41	SW-A	" " " " "

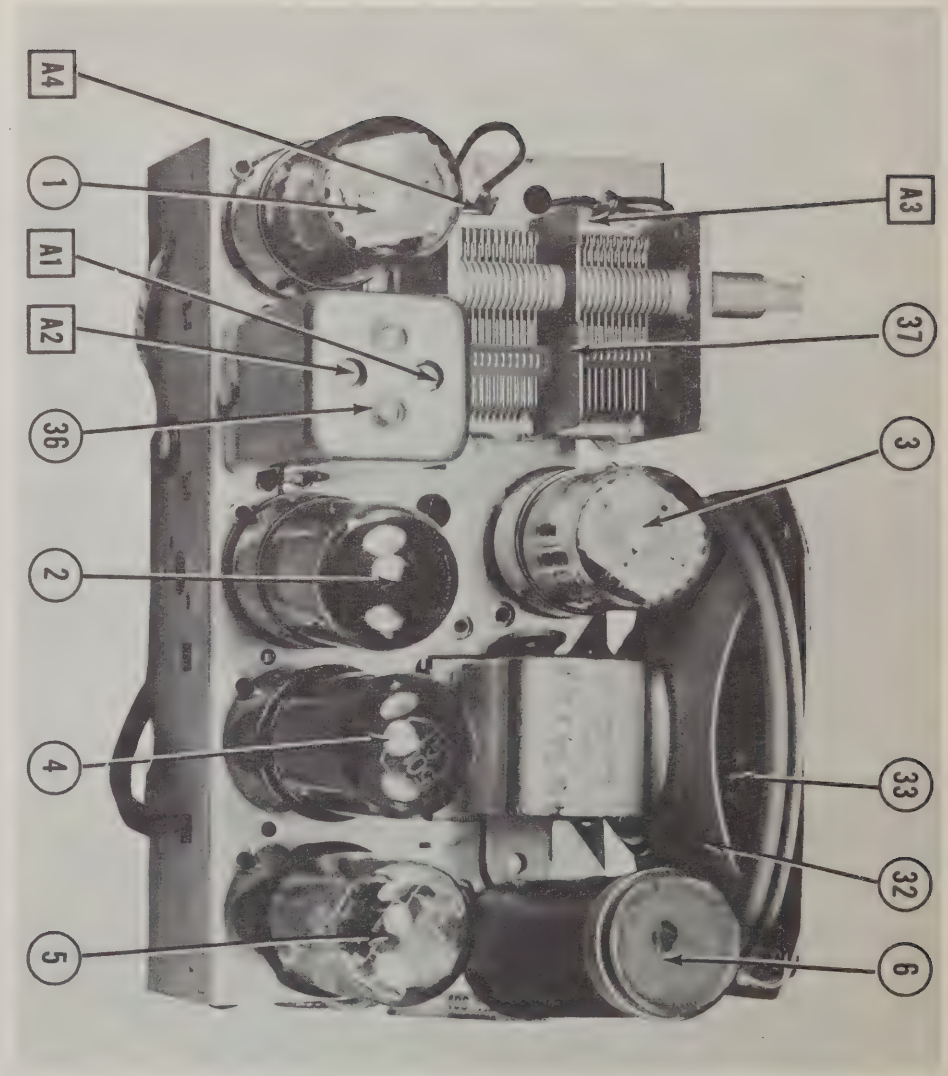
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GLOBE PART No.	IRC PART No.	
21	15KΩ	½		BTS-15K	Br.-Grn.-Or. Oscillator Grid
22	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Bias Network
23	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. AVC Network
24	68KΩ	½		BTS-68K	Blue-Gray-Or. " "
25	68KΩ	½		BTS-68K	Blue-Gray-Or. IF Screen Dropping
26	20KΩ	½		BTS-22K	Red-Blk.-Or. IF Plate Load
27	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
28	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
29	270KΩ	½		BTS-270K	Red-Vi.-Yl. Output Grid
30	1200Ω	1		BTA-1200	Br.-Red-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GLOBE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
31	2000Ω	3.3Ω	170Ω	.5Ω		A-3876	T22S45		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GLOBE PART No.	JENSEN PART No.		
32	FIELD PM	VC IMP. 3.3Ω		ST-113 Mod. P4-X		
33	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

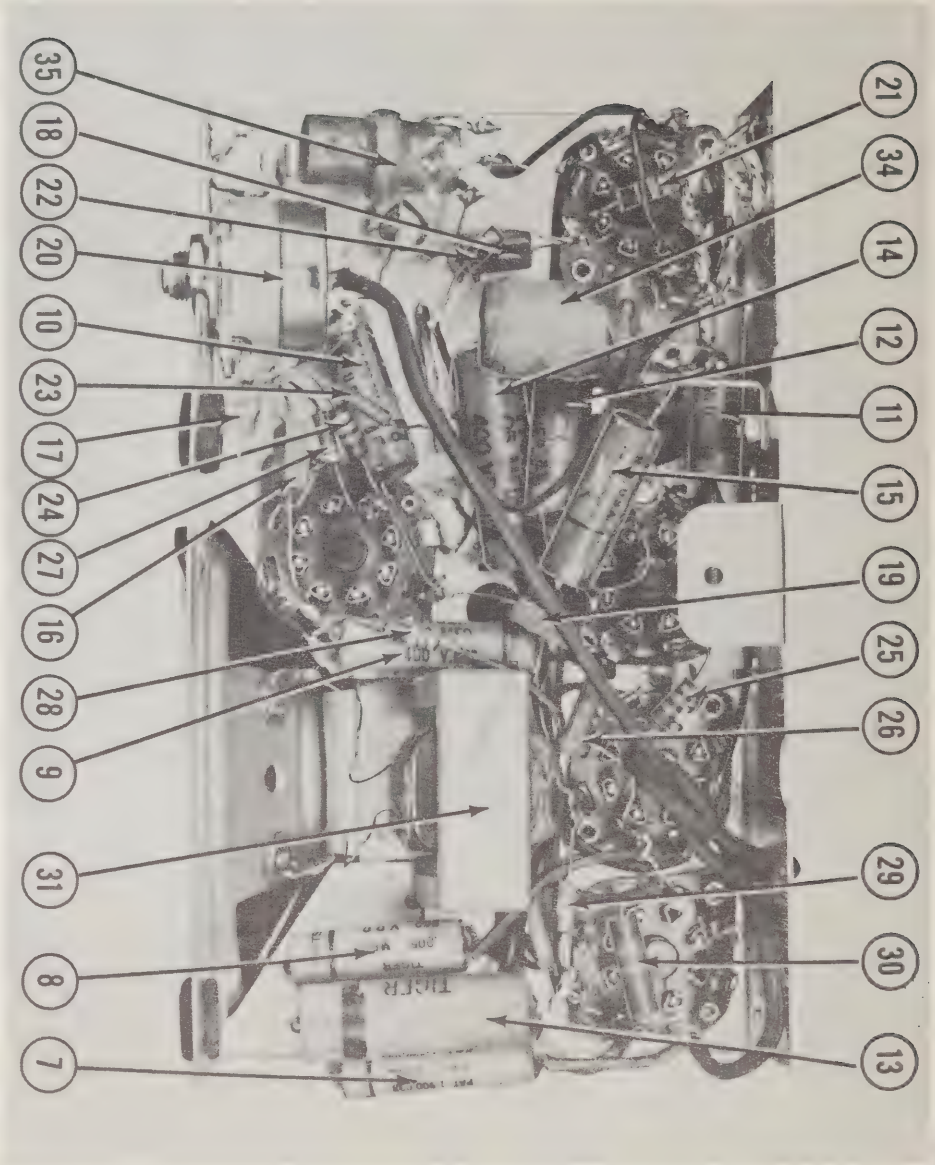
R F COILS

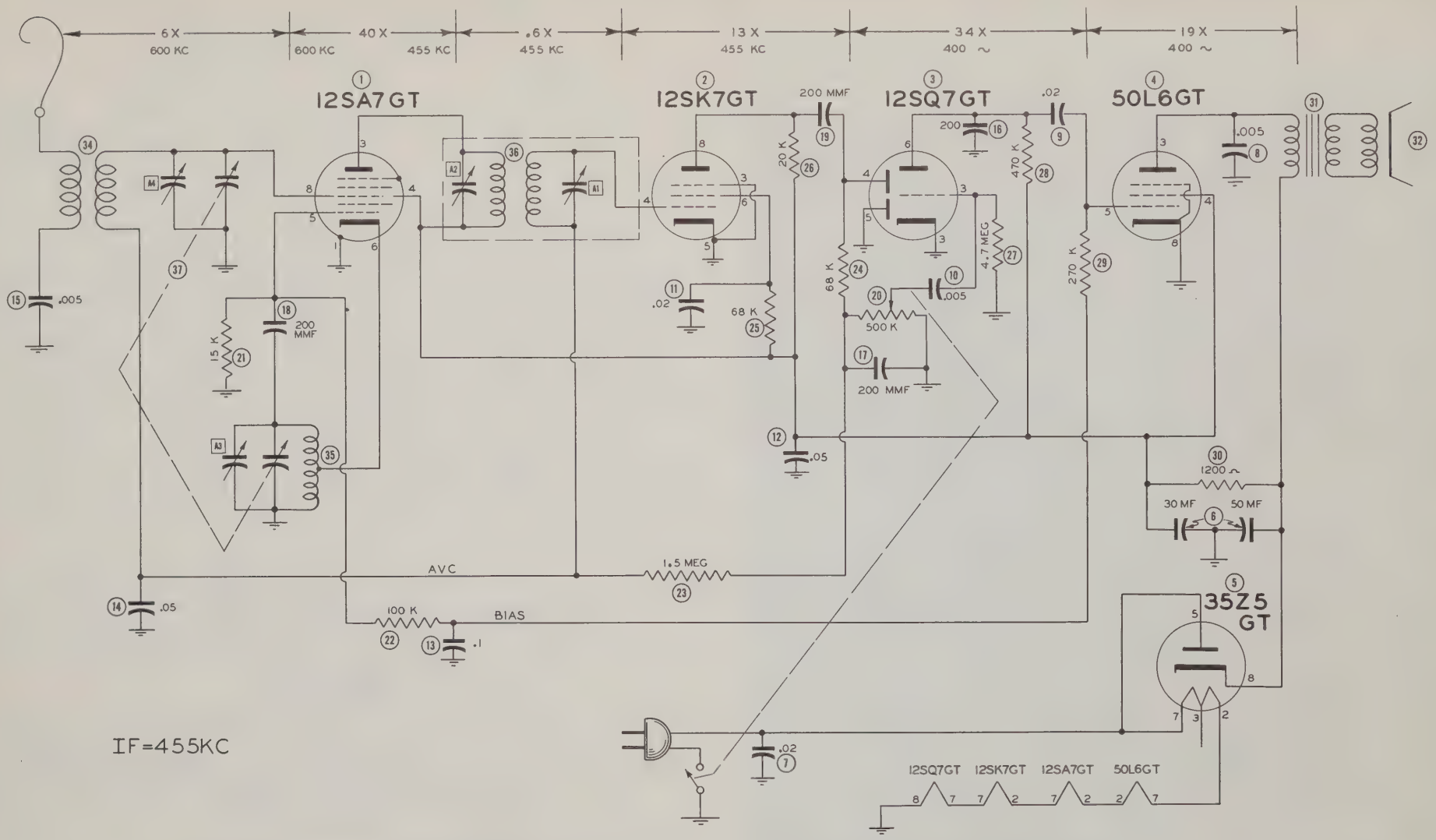
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	GLOBE PART No.	MEISSNER PART No.	
34	Ant. Coil	38Ω	5.5Ω		14-1026	
35	Osc. Coil		6.5Ω		14-1040	
36	Input IF	16Ω	16Ω		16-6658	

MISCELLANEOUS

ITEM No.	PART NAME	GLOBE PART No.	NOTES
37	2 Gang Var. Cap.		21-370 MMF, 28-181 MMF

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V	34VAC	105VDC	105VDC	-7VDC	0V	23VAC	-34VDC
2	12SK7GT	0V	23VAC	0V	-41VDC	0V	35VDC	12VAC	-46VDC
3	12SQ7GT	0V	-75VDC	0V	-5VDC	0V	60VDC	12VAC	0V
4	50L6GT	0V	34VAC	122VDC	105VDC	-2.2VDC	105VDC	89VAC	0V
5	35Z5GT/G	-45VDC	89VAC	92VAC	105VDC	117VAC	0V	117VAC	130VDC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	33Ω	70KΩ	70KΩ	13KΩ	.5Ω	23Ω	1.8MEGΩ
2	12SK7GT	0Ω	23Ω	0Ω	1.8MEGΩ	0Ω	140KΩ	12Ω	90KΩ
3	12SQ7GT	0Ω	4.5MEGΩ	0Ω	530KΩ	0Ω	540KΩ	12Ω	0Ω
4	50L6GT	INFΩ	33Ω	70KΩ	70KΩ	360KΩ	70KΩ	76Ω	0Ω
5	35Z5GT/G	110KΩ	76Ω	84Ω	70KΩ	103Ω	INFΩ	103Ω	70KΩ

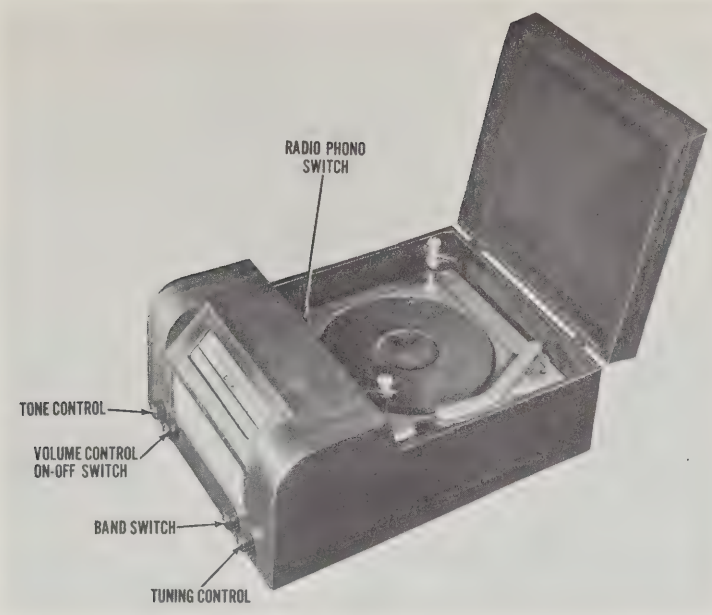
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-18

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



GLOBE MODEL 62C

TRADE NAME	Globe, Model 62C
MANUFACTURER	Globe Electronics Inc., 225 W. 17th St., New York, N.Y.
TYPE SET	AC Operated Combination Phono-Radio Superheterodyne with Loop Antenna
TUBES (SIX)	Types, 14Q7 Converter, 14A7 1st IF Amp., 14A7 2nd IF Amp., 14B6 Det.-AVC-AF, 35A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	110-120 Volts AC — RATING .260 Amp. @ 117V AC
TUNING RANGE—BROADCAST	550-1650KC — **SHORT WAVE** 6.0-21.0MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set right edge of pointer saddle 2-7/16" from right edge of dial backplate. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and chassis. Volume control at maximum, position. Output of signal generator should be no higher than necessary to obtain output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 6 of 14Q7. Low side to chassis.	455KC	BC (counter-clockwise)	Tuning capacitor (fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200 MMF.	High side to ext. ant. Low side to chassis.	1650KC	BC	"	"	A5	Adjust for maximum output
3	200 MMF.	"	1500KC	"	Tune for maximum output.	"	A6	" " " "
4	200 MMF.	"	600KC	"	"	"	A7	Rock variable and adjust for maximum output. Repeat last three steps until no further increase can be obtained.
5	400Ω	"	21.0MC	SW (clockwise)	Tuning capacitor (fully open)	"	A8	Adjust for maximum output.
6	400Ω	"	18.5MC	"	Tune for maximum output.	"	A9	Rock variable and adjust for maximum output.

DISASSEMBLY INSTRUCTIONS

1. Loosen set screws and remove control knobs from front of cabinet.
2. Remove three chassis mounting bolts from bottom of cabinet.
3. Remove four wood screws holding changer mounting board. Lift up changer.
4. Loosen set screw on radio-phono switch control knob. Remove knob.
5. Remove nut mounting radio-phono switch. Remove switch.
6. Remove chassis from cabinet.
7. Unsolder terminal strip from changer.
8. Unsolder phono-motor leads from terminal strip and phono-radio switch.
9. Unsolder phono-pickup leads from switch and terminal strip.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		GLOBE PART No.	STANDARD REPLACEMENT		
1	Converter	14Q7	14Q7	8AL	
2	IF Amp.	14A7	14A7	8V	
3	IF Amp.	14A7	14A7	8V	
4	Det.-AVC-AF	14B6	14B6	8W	
5	Power Output	35A5	35A5	6AA	
6	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	GLOBE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
7A	50	150		PRSA150-50-	BRD3515	2N520	M-5030-150	TA-530	Filter - Red
B	30	150		30					" - Blue
8	.05	600		684-05	DT6S5	TP415	S-6-05	TC-15	Output Plate Bypass
9	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Tone Compensation
10	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
11	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
12	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	RF Bypass Pwr. Supp.
13	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
14	.02	400		484-02	DT4S2	TP423	S-4-02	TC-12	Line Filter
15	.05	400		484-05	DT4S2	TP426	S-4-05	TC-12	Conv. Screen Bypass
16	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Ant. Coupling
17	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Audio Plate Bypass
18	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	IF Bypass Vol. Cont.
19	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	IF Coupling
20	200	500		1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Osc. Grid Capacitor
21	6000	300		1467-006	1D5D6	MC467	MW.5-26	1FM-26	Fixed Padder
22	6000	300		1467-006	1D5D6	MC467	MW.5-26	1FM-26	" "
23	50	500		1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Fixed Trimmer
24	50	500		1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Ant. Pri. Shunt

CONTROLS

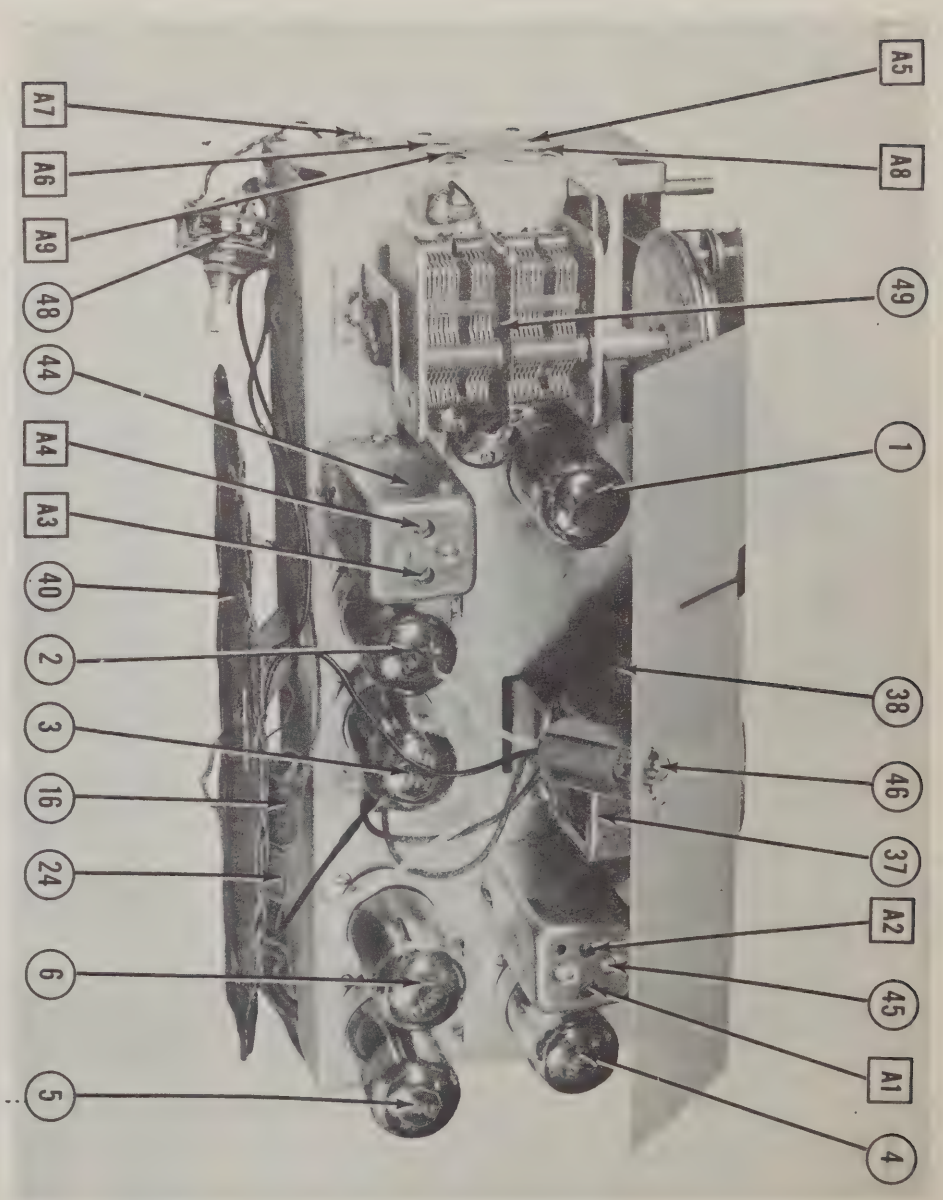
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	GLOBE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
25A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 25A per instructions
C	Switch			M26	41	SW-A	" " " " "
26A	500KΩ	1		MR48	D13-133	M-60-Z	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 26A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	GLOBE PART No.	IRC PART No.	
27	27KΩ	½		BTS-27K	Red-Vi.-Or. Oscillator Grid
28	470Ω	½		BTS-470	Yl.-Vi.-Br. Converter Screen Dropping
29	1000Ω	½		BTS-1000	Br.-Blk.-Red IF Plate Load
30	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 2nd IF Grid
31	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. AVC Network
32	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
33	220KΩ	½		BTS-220K	Red-Red-Yl. AF Plate Load
34	120Ω	½		BW-½-120	Br.-Red-Br. Output Cathode
35	1200Ω	1		BTA-1200	Br.-Red-Red Filter
36	120Ω	½		BW-½-120	Br.-Red-Br. SW Oscillator Coil Shunt - See Note

Note-Some models use 9200Ω in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GLOBE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
37	1850Ω	3.2Ω	140Ω	.7Ω		A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GLOBE PART No.	JENSEN PART No.		
38	FIELD	VC IMP.				
	PM	3.2Ω				
	CONE DIA.	VC DIA.				
39	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

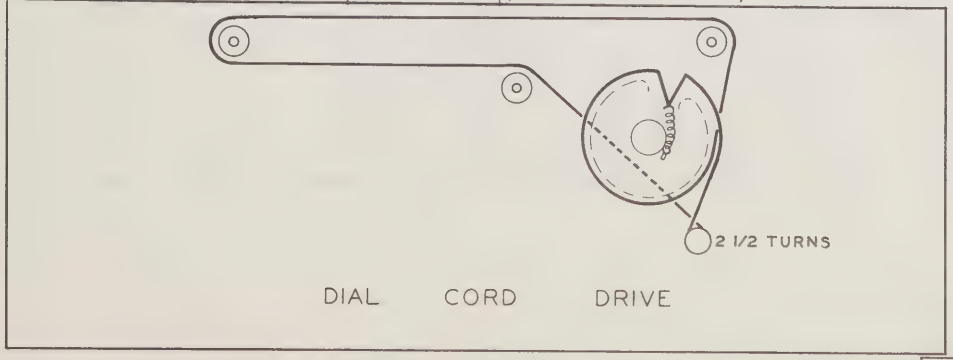
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	GLOBE PART No.	MEISSNER PART No.	
40	Loop Ant.	0Ω	1Ω			
41	SW Ant.Coil	.2Ω	0Ω		14-1044	
42	BC Osc. Coil		5.5Ω		14-1040	
43	SW Osc. Coil		0Ω		14-1046	
44	Input IF	24Ω	16.5Ω	S-103	16-6658	
45	Output IF	14.5Ω	14Ω	S-104	16-6660	

DIAL LIGHT

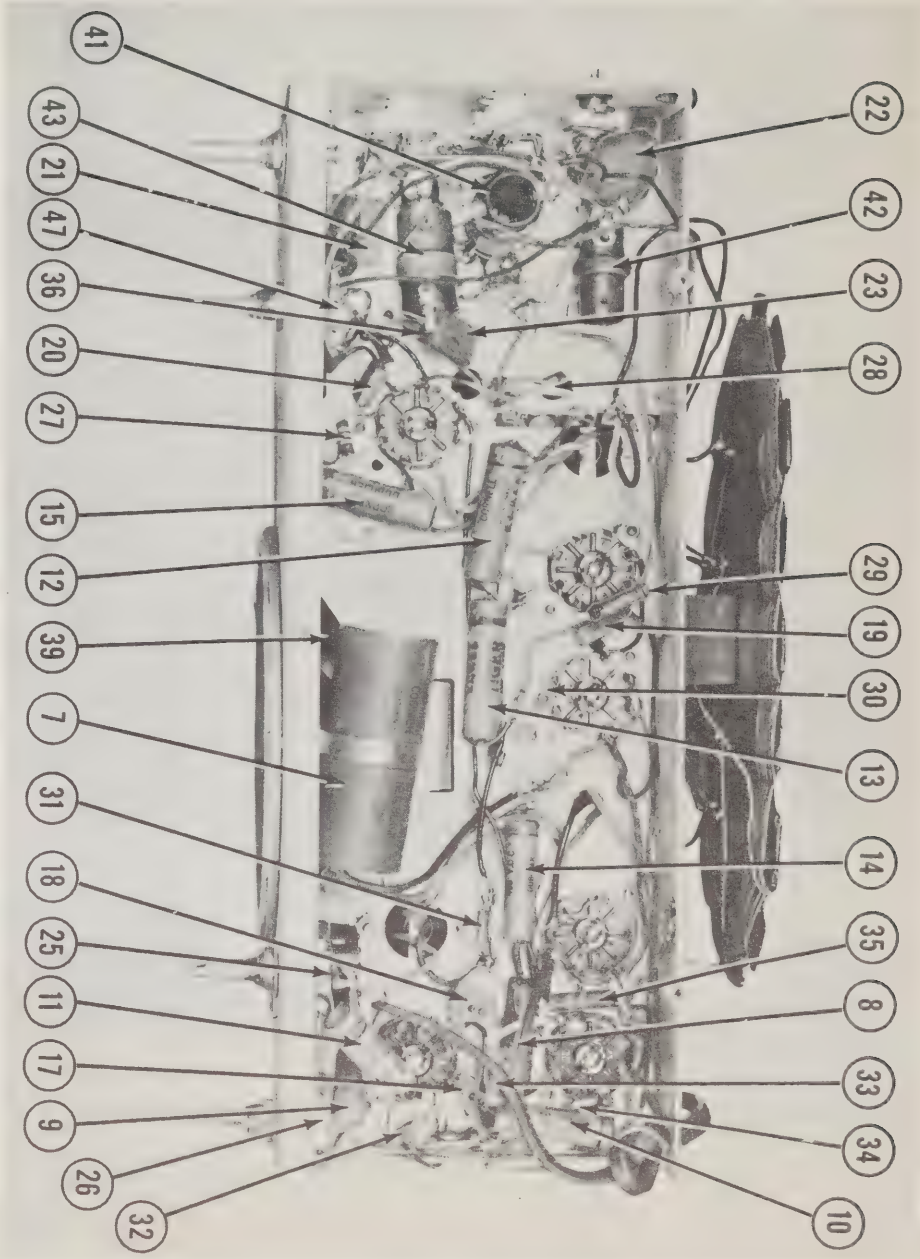
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GLOBE PART No.		
46	Bayonet	6-8	0.15	Brown			Type 47

MISCELLANEOUS

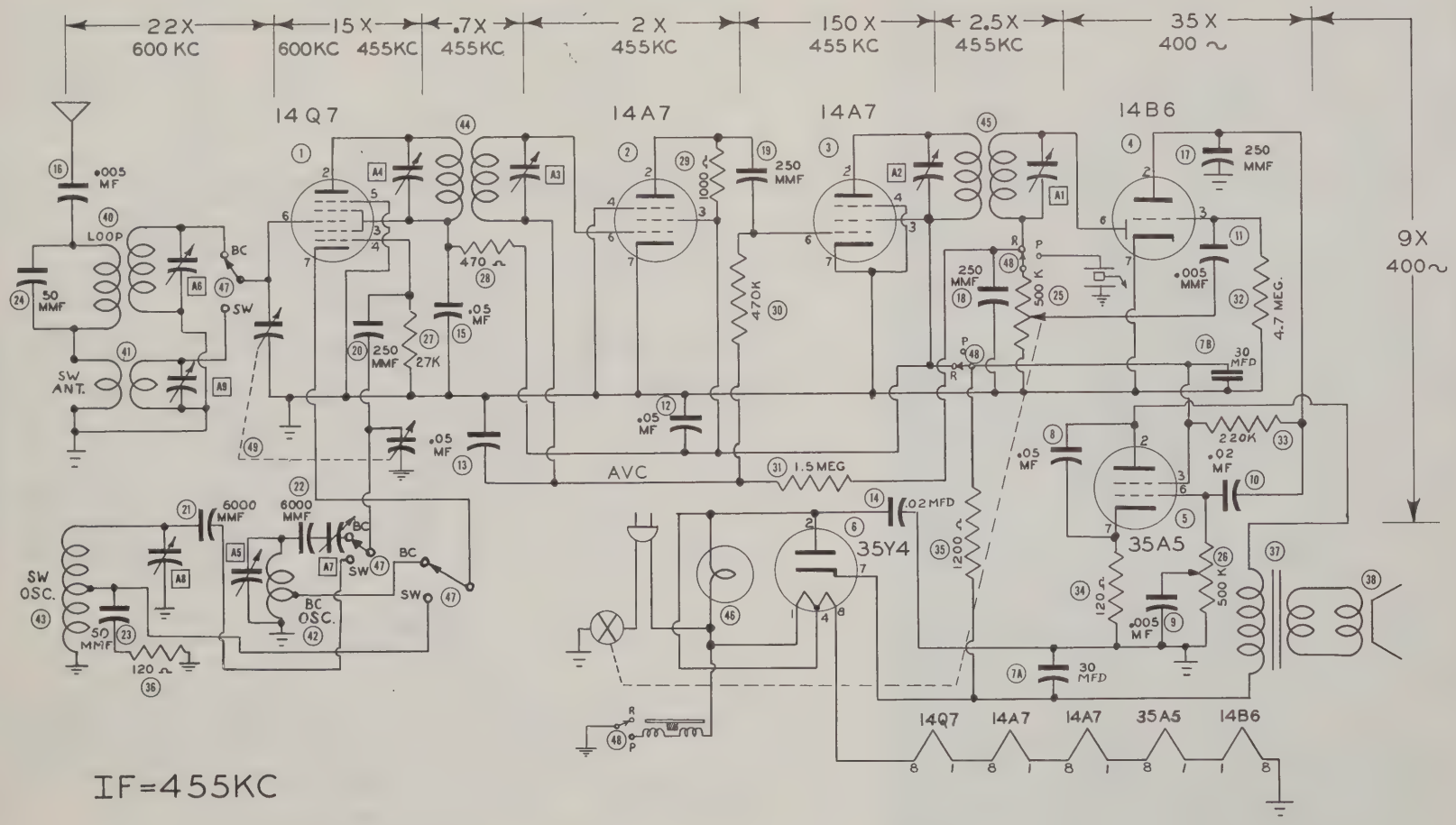
ITEM No.	PART NAME	GLOBE PART No.	NOTES
47	Bandswitch		
48	Switch		Radio-Phono
49	2 Gang Var. Cap.		(12-465 MMF each section)



CHASSIS—BOTTOM VIEW



GLOBE MODEL 620



IF=455KC

Pin No.	14Q7 Volt.	14Q7 Res	14A7 Volt	14A7 Res
1	74V.AC	67Ω	60V.AC	54Ω
2	76V.DC	65KΩ	72V.DC	65KΩ
3	76V.DC	65KΩ	82V.DC	65KΩ
4	-6.2V.DC	25KΩ	0V.	0Ω
5	0V.	0Ω	0V.	0Ω
6	0V.	1.9MEG.	0V.	1.9MEG.
7	0V.	.5Ω	0V.	0Ω
8	85VAC	78Ω	74V.AC	67Ω

Pin No	14A7 Volt	14A7 Res	14B6 Volt	14B6 Res.
1	47V.AC	41Ω	13V.AC	11Ω
2	82V.DC	65KΩ	57V.DC	300KΩ
3	82V.DC	65KΩ	-.6V.DC	4.5MEG.
4	0V.	0Ω	0V.	0Ω
5	0V.	0Ω	-.6V.DC	400KΩ
6	-.2V.DC	2.4MEG.	0V.	0Ω
7	0V.	0Ω	0V.	0Ω
8	60VAC	54Ω	0V.	0Ω

Pin No	35A5 Volt	35A5 Res	35Y5 Volt	35Y5 Res.
1	13V.AC	11Ω	117V.AC	100Ω
2	18V.DC	65KΩ	113V.AC	97Ω
3	82V.DC	65KΩ	0V.	INF.
4	0V.	INF.	113V.AC	97Ω
5	0V.	INF.	0V.	INF.
6	0V.	440KΩ	0V.	INF.
7	4.6V.DC	110Ω	122V.DC	65KΩ
8	47V.AC	41Ω	85V.AC	78Ω

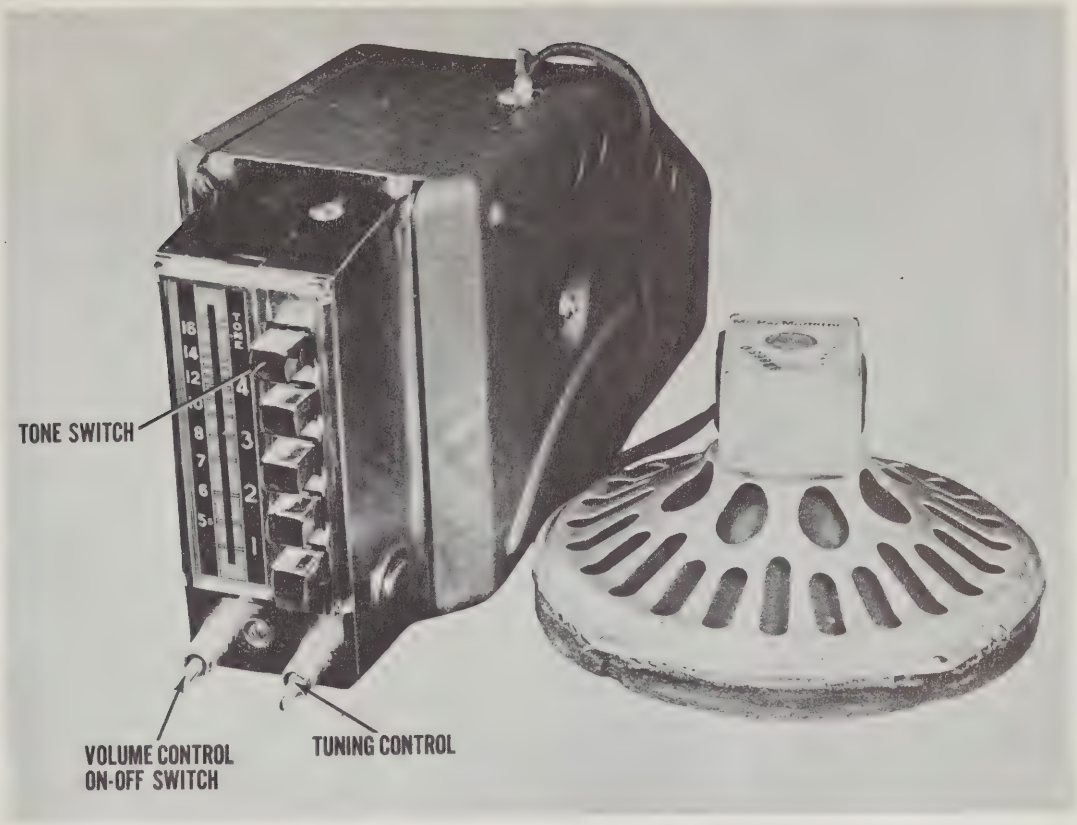
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-19

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



MOPAR
MODEL 602

MOPAR
MODEL 602

MOPAR MODEL 602

TRADE NAME	Mopar, Model 602 (Colonial Model 671A) for 1941, 1942, 1946, 1947 Chrysler Products
SUPPLIER	Chrysler Corp., Detroit 31, Michigan
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne with Pushbutton Tuning
TUBES (SIX)	Types, 7A7 RF Amp., 7Q7 Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, 7C5 Power Output, 0Z4G Rectifier.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	540-1600KC RATING 6.0 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn slugs completely out and set pointer at 1600KC. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to ant. receptacle. Low side to chassis.	260KC	Slugs in all the way.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	20MMF in series with shielded ant. lead	"	1600KC	Slugs completely out.	"	A5,A6, A7.	Adjust for maximum output in order given.
3	"	"	1400KC	1400KC	"	A8, A9, A10.	Adjust for maximum output. in order given. Repeat last two steps until no further improvement can be made. Reinstall receiver in car and tune in a weak station near 1400KC. Adjust A7 for maximum output.

PUSHBUTTON ADJUSTMENTS

1. Turn set on and allow it to warm up for about 15 minutes.
2. Remove button covers and loosen each knurled screw about one turn.
3. Manually tune in first desired station. Then push in completely any of the four knurled screws. Tighten knurled screw firmly.
4. Check accuracy of setting by detuning with manual tuning control and retuning with pushbutton. If setting is off repeat last two steps.
5. Replace button cover.
6. To set up the remaining buttons follow the same procedure as outlined above.

HOWARD W. SAMS & CO., INC. Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

MOPAR MODEL 602

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7Q7	7Q7	8AL	
3	IF Amp.	7A7	7A7	8V	
4	Det.-AVC-AF	7B6	7B6	8W	
5	Power Output	7C5	7C5	6AA	
6	Rectifier	0Z4G	0Z4G	4R	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	10	350	43691		UP6CJ13	FP328	DY-310	EL-153	■ Filter
B	15	350							▲ "
C	20	25							Cath. Bypass
8	.5	100	HT21019	484-.5	DT4P5	TP431	S-4-5	TC-5	Hash Filter
9	.5	100	HT21019	484-.5	DT4P5	TP431	S-4-5	TC-5	" "
10	.004	1500	HT42211	1684-004	MD16D4	OW343	TM-16-004	TR-24	Buffer
11	.007	600	HT42445	684-007	DT6D7	TP445	TM-6-007	TC-27	Output Plate Bypass
12	.05	200	HT42204	484-05	DT4S5	TP426	S-4-05	TC-15	Audio Coupling
13	.007	600	HT42445	684-007	DT6D7	TP445	TM-6-007	TC-27	Tone Compensation
14	.005	400	HT42227	484-005	DT6D5	TP408	TM-6-005	TC-25	Audio Coupling
15	.01	100	HT42206	484-01	DT4S1	TP421	S-4-01	TC-11	Tone Compensation
16	.25	200	HT41377	484-.25	DT4P25	TP430	S-4-25	TC-2	Screen Bypass
17	.01	400	HT42877	484-01	DT4S1	TP421	S-4-01	TC-11	IF Cath. Bypass
18	.05	200	HT42204	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
19	.05	200	HT42204	484-05	DT4S5	TP426	S-4-05	TC-15	" "
20A	250		43696						Hash Filter
B	250								" "
21	250	500	20548	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Output Grid Filter
22	50	500	14255	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
23	165		46462						Fixed Trimmer Cer.
24	300	500	43685	1468-0003	5W5T3	MC241	MO.5-33	1FM-33	Fixed Padder
25	10	500	41777	1468-00001	5W5Q1	MC215	MO.5-41	MS-41	RF Coupling

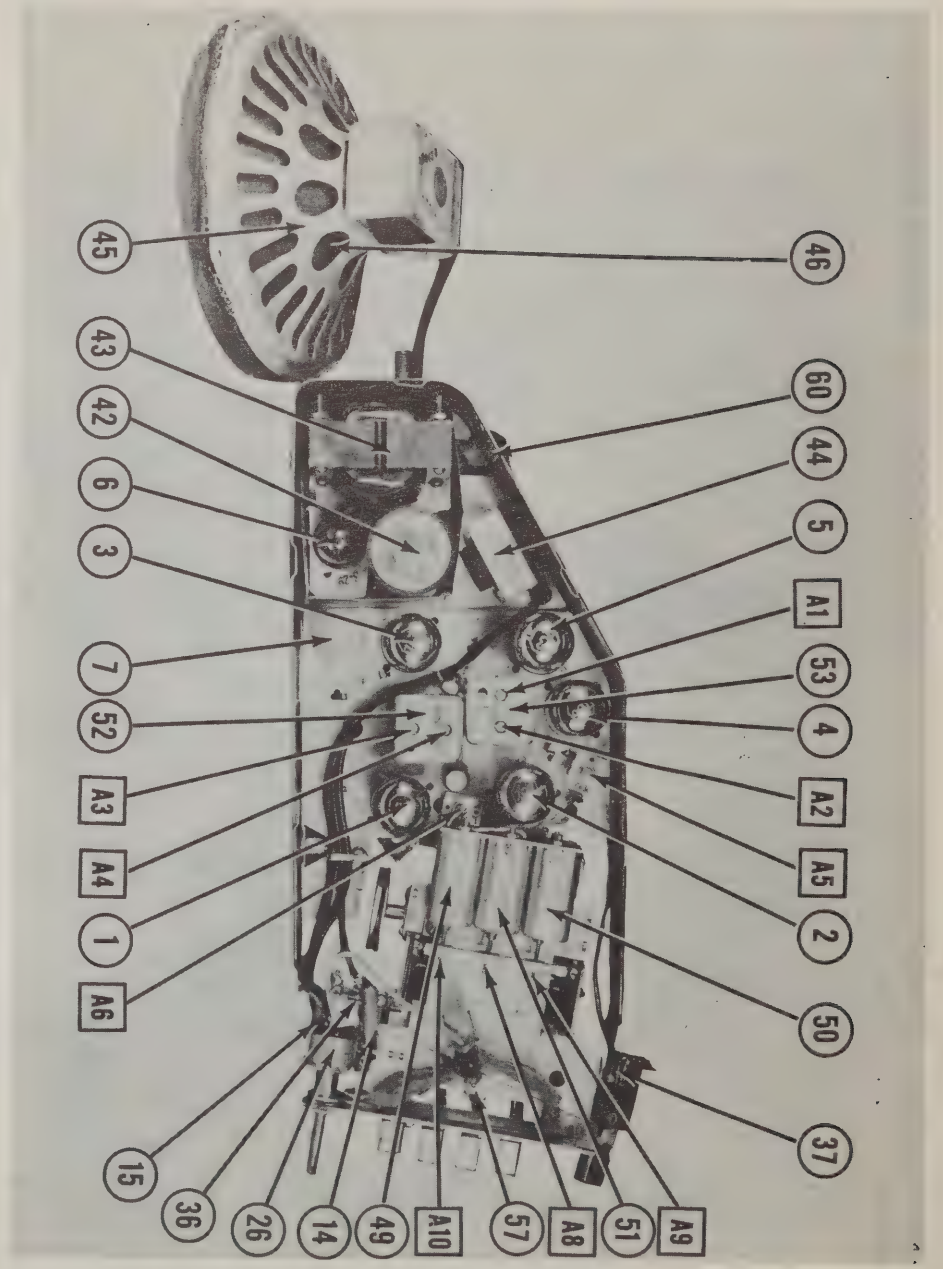
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
26	300K	1	44662				Volume Control & Switch

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	IRC PART No.	IDENTIFICATION CODES
27	1 Meg.	1/3	XY31052	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
28	22KΩ	1/2	WY32231	BTS-22K	Red-Red-Or. RF Plate Load
29	1 Meg.	1/3	XY31052	BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
30	22KΩ	1/3	XY32232	BTS-22K	Red-Red-Or. Oscillator Grid
31	1800Ω	1/3	XY31821	BTS-1800	Br.-Gray-Red IF Cathode
32	22KΩ	1	ZY32231	BTA-22K	Red-Red-Or. Screen Dropping
33	1 Meg.	1/3	XY31052	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
34	15 Meg.	1/3	XY31562	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
35	1 Meg.	1/3	XY31052	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
36	68KΩ	1/3	XY36831	BTS-68K	Blue-Gray-Or. Tone Compensation
37	68KΩ	1/3	XY36831	BTS-68K	Blue-Gray-Or. " "
38	150KΩ	1/3	XY31541	BTS-150K	Br.-Grn.-Yl. Output Grid
39	270Ω	1	ZY32711	BW-1-270	Red-Vi.-Br. Output Cathode
40	2700Ω	1	ZY32721	BTA-2700	Red-Vi.-Red Filter
41	150Ω	1	ZY31512	BW-1-150	Br.-Grn.-Br. Hash Suppression

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: MALLORY PART No.	REPLACEMENT DATA: RADIART PART No.	INSTALLATION NOTES
42	Interrupter	6.3	115 ∿	43697	859	5301	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDARSON PART No.	INSTALLATION NOTES
43	5.8V DC @ 3.0A	540V CT @ .045A			43787	P4061	T22R20*	*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
44	5700Ω	3.4Ω	600Ω	.6Ω	43692	A-3877*	T22S46*		*Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS: FIELD RES. / CONE DIA.	RATINGS: VC IMP. / VC DIA.	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
45	4.2Ω	3.4Ω	45914			
46	6-7/8"	11/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA: MEISSNER PART No.	
47	Ant. Choke Coil		0Ω	46023A		
48	Grid Filter Choke		5Ω	48820		
49	Ant. Coil Assembly		8Ω	45812		Items 49, 50, 51 are ganged together and slug tuned
50	RF Coil Assy		8.5Ω	45812		
51	Osc. " "	.3Ω	5.5Ω	45812		
52	Input IF	36Ω	36Ω	43775	16-6652	
53	Output IF	55Ω		43776		
54	Filament RF Choke		0Ω	5115E		
55	Hash Choke		0Ω	9044E		
56	Spark Choke		0Ω	5220CH		

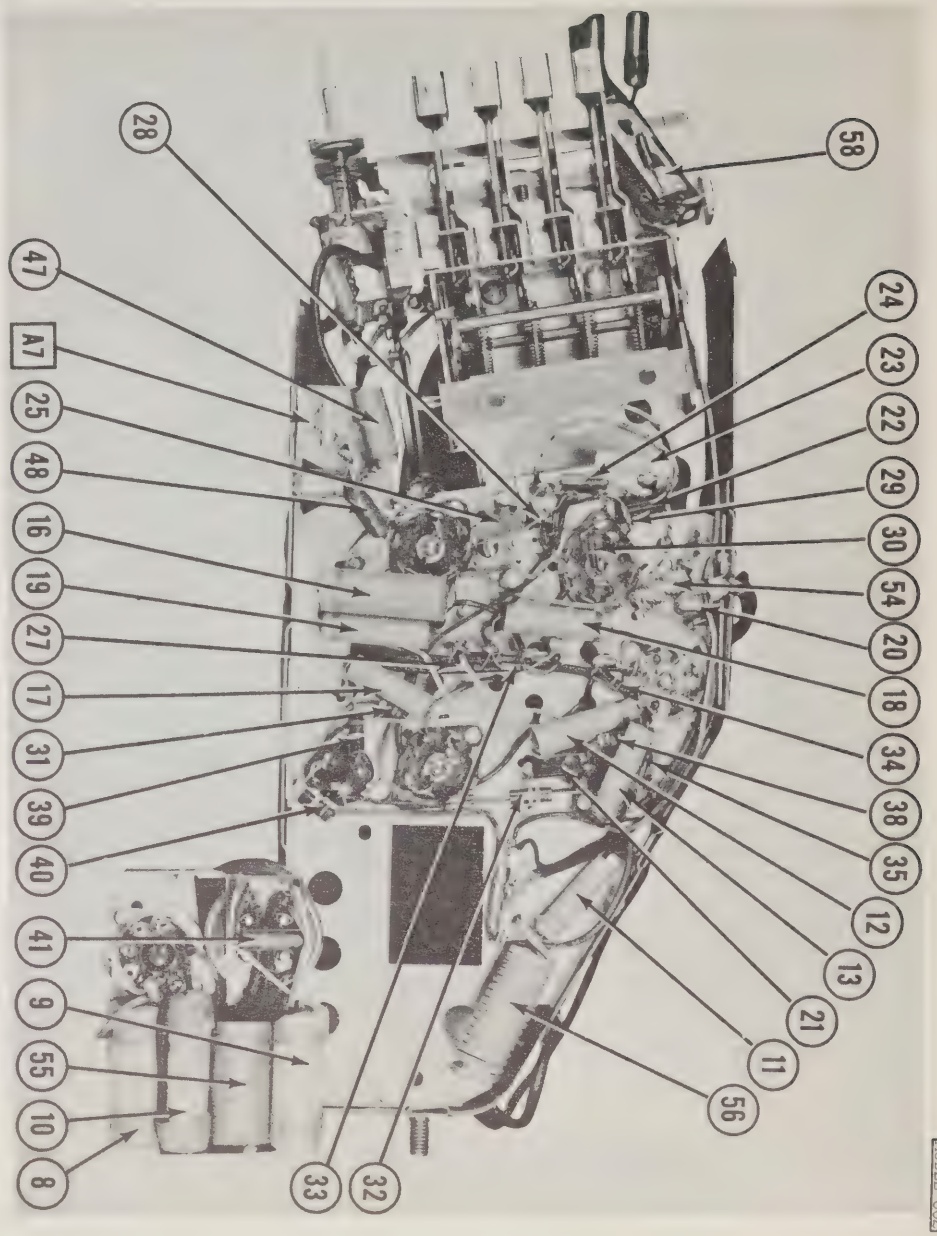
DIAL LIGHT

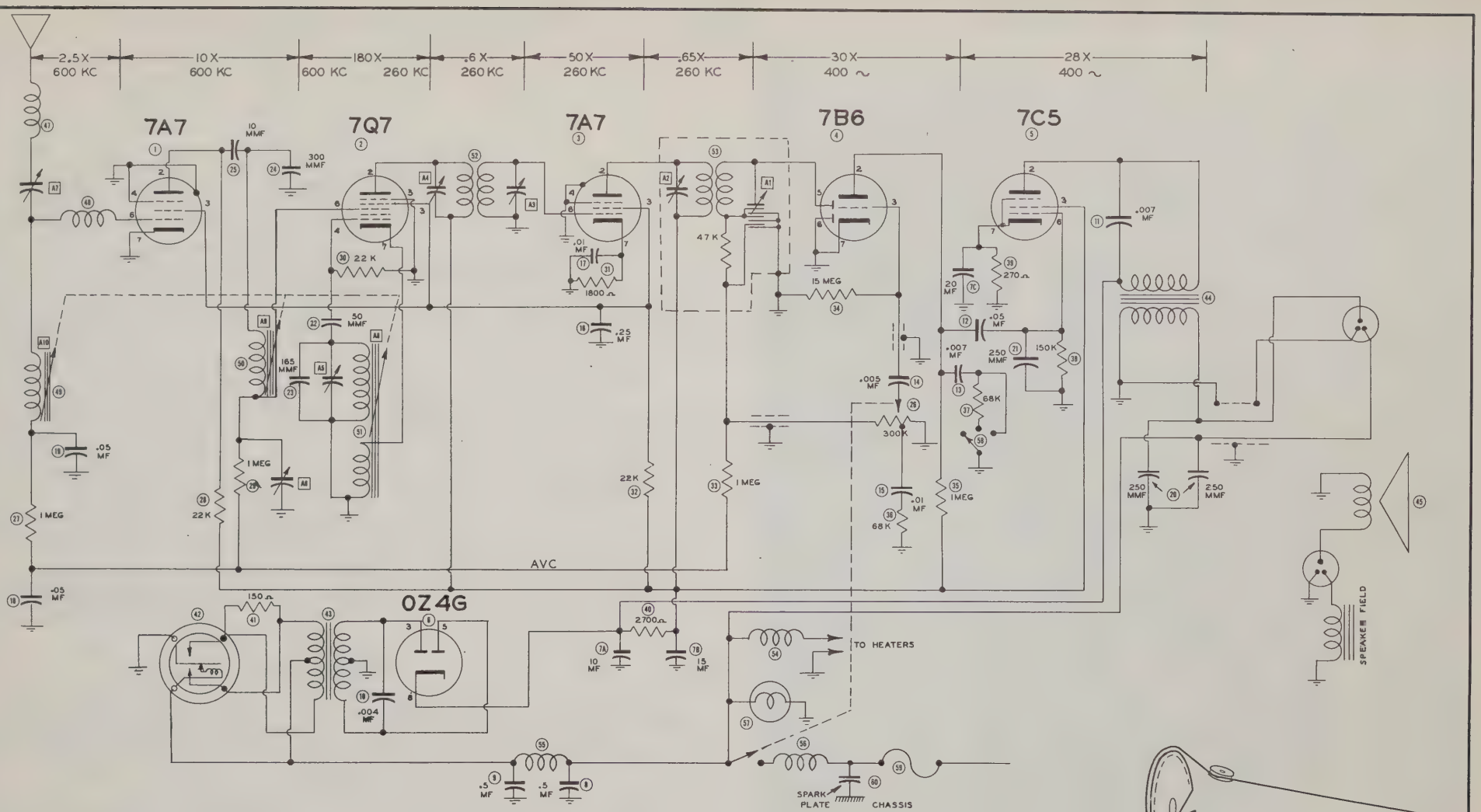
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: MOPAR-COLONIAL PART No.	REPLACEMENT DATA	INSTALLATION NOTES
57	Bayonet	6.3	0.25	Blue	14914		Type 44

MISCELLANEOUS

ITEM No.	PART NAME	MOPAR-COLONIAL PART No.	NOTES
58	Tone Switch	45764A	
59	Fuse	17392	14 Amp.
60	Spark Plate	43522A	
A5	Trimmer	45880	Osc. Adj.
A6	"	43694	RF Adj.
A7	"	43695	Ant. Adj.
	Dial	49054	
	Pointer	45890	
	Tuner Unit	61610	Incl. Pushbutton Plungers

CHASSIS—BOTTOM VIEW





IF=260KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	5.8 V DC	92 V DC	58 V DC	0 V	0 V	-3 V DC	0 V	0 V
2	7Q7	0 V	200 V DC	58 V DC	-3 V DC	0 V	-2 V DC	0 V	5.8 V DC
3	7A7	5.8 V DC	200 V DC	58 V DC	0 V	0 V	0 V	-3.7 V DC	0 V
4	7B6	5.8 V DC	70 V DC	-3.5 V DC	0 V	-.05 V DC	0 V	0 V	0 V
5	7C5	5.8 V DC	220 V DC	200 V DC	0 V	188 V DC	0 V	0 V	0 V
6	0Z4G	0 V	0 V	280 V AC	0 V	280 V AC	5.8 V DC	0 V	240 V DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	∞ Ω	170 KΩ	190 KΩ	0 Ω	0 Ω	1.9 MEG Ω	0 Ω	0 Ω
2	7Q7	0 Ω	150 KΩ	190 KΩ	20 KΩ	0 Ω	1.9 MEG Ω	3 Ω	∞ Ω
3	7A7	∞ Ω	150 KΩ	190 KΩ	0 Ω	0 Ω	32 Ω	1700 Ω	0 Ω
4	7B6	∞ Ω	1 MEG Ω	1.5 MEG Ω	0 Ω	300 KΩ	0 Ω	0 Ω	0 Ω
5	7C5	∞ Ω	150 KΩ	150 KΩ	INF Ω	150 KΩ	140 KΩ	INF Ω	0 Ω
6	0Z4G	INF Ω	INF Ω	300 Ω	INF Ω	270 Ω	∞ Ω	INF Ω	150 KΩ

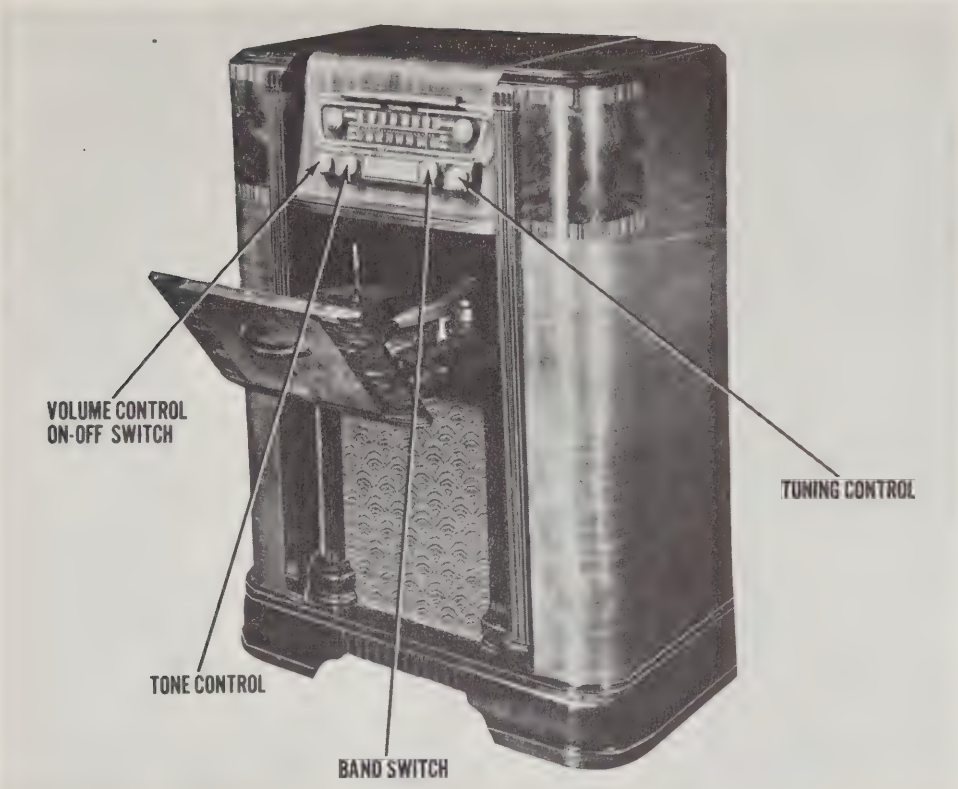
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY
ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-20

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting negative (-) 3 volts to the AVC line.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

MOTOROLA
MODELS 75 F 21 (CH. HS-91)



MOTOROLA
MODELS 75 F 21 (CH. HS-91)

MOTOROLA MODEL 75F21

TRADE NAME	Motorola, Model 75F21 (Chassis HS-91)
MANUFACTURER	Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	AC Operated Phono-Radio Combination Superheterodyne with Loop Antenna
TUBES (SEVEN)	Types, 7Q7 Converter, 6SG7 IF Amp., 6SQ7 Det.-AVC-AF, 6SQ7 Phase Inverter (2) 6K6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	.750 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC
SHORT WAVE	5.6 - 12.2MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 4 (grid) 7Q7. Low side to chassis.	455KC	BC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
2	.1 MFD.	"	1620KC	"	"	"	A5	" " " "
3		Loop	1400KC	"	Tune for maximum output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4	.1 MFD.	Same as Step 1	12.2MC	SW	Tuning cap. fully open.	"	A7	Adjust for maximum output. Check for image by tuning signal generator to approximately 13.1MC. If signal is not heard retune signal generator to 12.2MC and loosen A7 until next peak is obtained. Adjust for maximum output and recheck for image.
5	50 MMFD	High side to ext. ant. lead. Low side to chassis.	11.5MC	"	Tune for maximum output.	"	A8	Disconnect loop. Rock tuning cap. and adjust for maximum output.

HOWARD W. SAMS & CO., INC. Indianapolis . . Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	7Q7	7Q7	8AL	
2	IF Amp.	6SG7	6SG7	8BK	
3	Det.-AVC-AF	6SQ7	6SQ7	8Q	
4	Phase Inverter	6SQ7	6SQ7	8Q	
5	Power Output	6K6GT	6K6GT	7S	
6	Power Output	6K6GT	6K6GT	7S	
7	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	30	350	23A27718		UP6BJ37	FP331	DY-311	EL-323	■ Filter
B	30	300							▲ "
C	20	25			BR202A				Bias Filter
9	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Output Plate Bypass
10	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" " "
11	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
12	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	" "
13	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Tone Compensation
14	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" "
15	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Audio Coupling
16	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	IF Plate Decoupling
17	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	IF Screen Bypass
18	.01	100		484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
19	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Conv. Screen Bypass
20	.1	200		484-.1	DT4P1	TP428	S-4-1	TC-1	RF Bypass Pwr. Supp.
21	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Audio Plate Bypass
22	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Diode Filter
23	100	500		1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Phono Coupling
24	50	500		1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
25	50	500		1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	RF Coupling
26	1500	300		1467-0015	1W5D15	MC456	MW.5-215	1FM-215	Fixed Padder

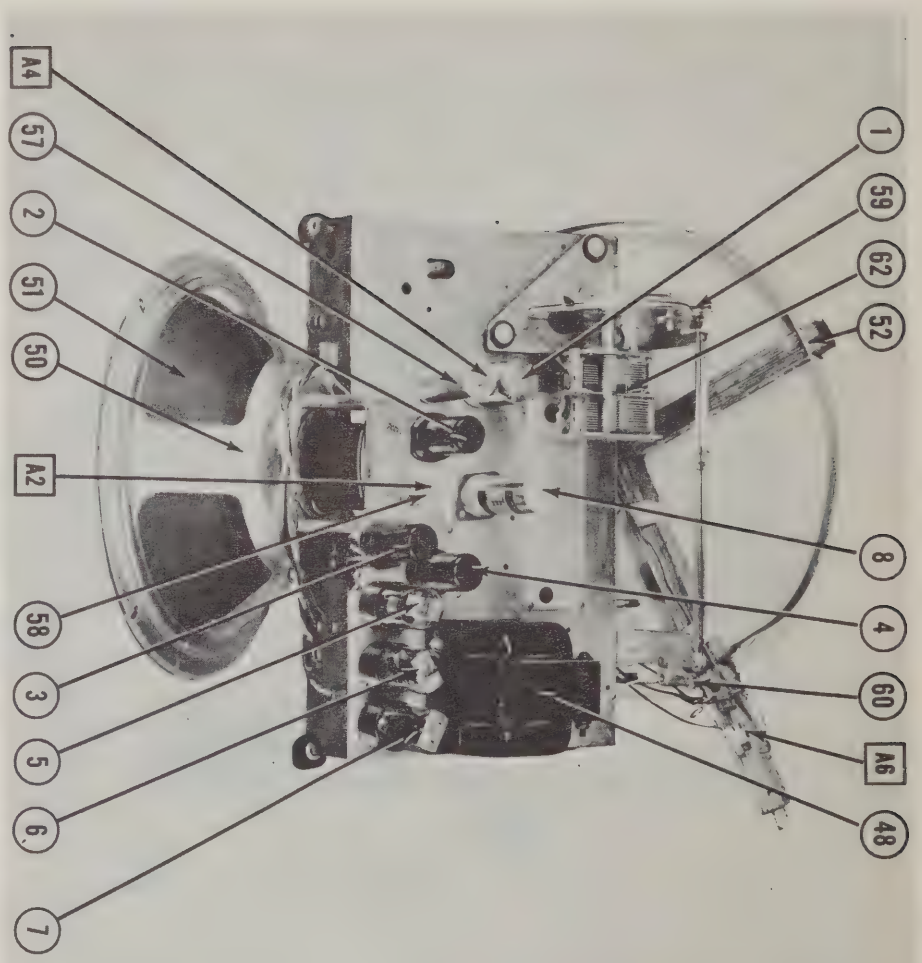
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
27A	1 Meg.	1	18K74891	TM240	D13-137X	AT-109	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 27A per instructions
C	Switch		" "	M26	41	SW-A	" " " " " "
28A	1 Meg.	1	18-A-28062-C	UM160	D11-137		Tone Control
B	Shaft		Not Req.	SS25	E		Attach to 28A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
29	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
30	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Converter Grid
31	12KΩ	2		BT-2-12K	Br.-Red-Or. Converter Screen Dropping
32	220Ω	½		BW-½-220	Red-Red-Br. Converter Cathode
33	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Series Phono
34	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
35	39KΩ	1		BTA-39K	Or.-White-Or. IF Screen Dropping
36	1000Ω	½		BTS-1000	Br.-Blk.-Red IF Plate Decoupling

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
37	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode RF Filter
38	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
39	33KΩ	½		BTS-33K	Or.-Or.-Or. Tone Compensation
40	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
41	68KΩ	½		BTS-68K	Blue-Gray-Or. AF Plate Load
42	220KΩ	½		BTS-220K	Red-Red-Yl. Phase Inverter Plate Load
43	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Grid
44	470KΩ	½		BTS-100K	Yl.-Vi.-Yl. Output Grid
45	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
46	180Ω	2		BW-2-180	Br.-Gray-Br. Bias Network
47	10Ω	½		BW-½-10	Br.-Blk.-Blk. Bias Network

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	STANCOR PART No.	THORDARSON PART No.	
48	117V AC @ .75A	640V CT @ .085A	5.2V AC @ 1.8A	6.3V AC @ 2.3A	25C75489			

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
49	9000Ω CT	3.35Ω	570Ω CT	.3Ω	25K74076	A-3824	T22S56		

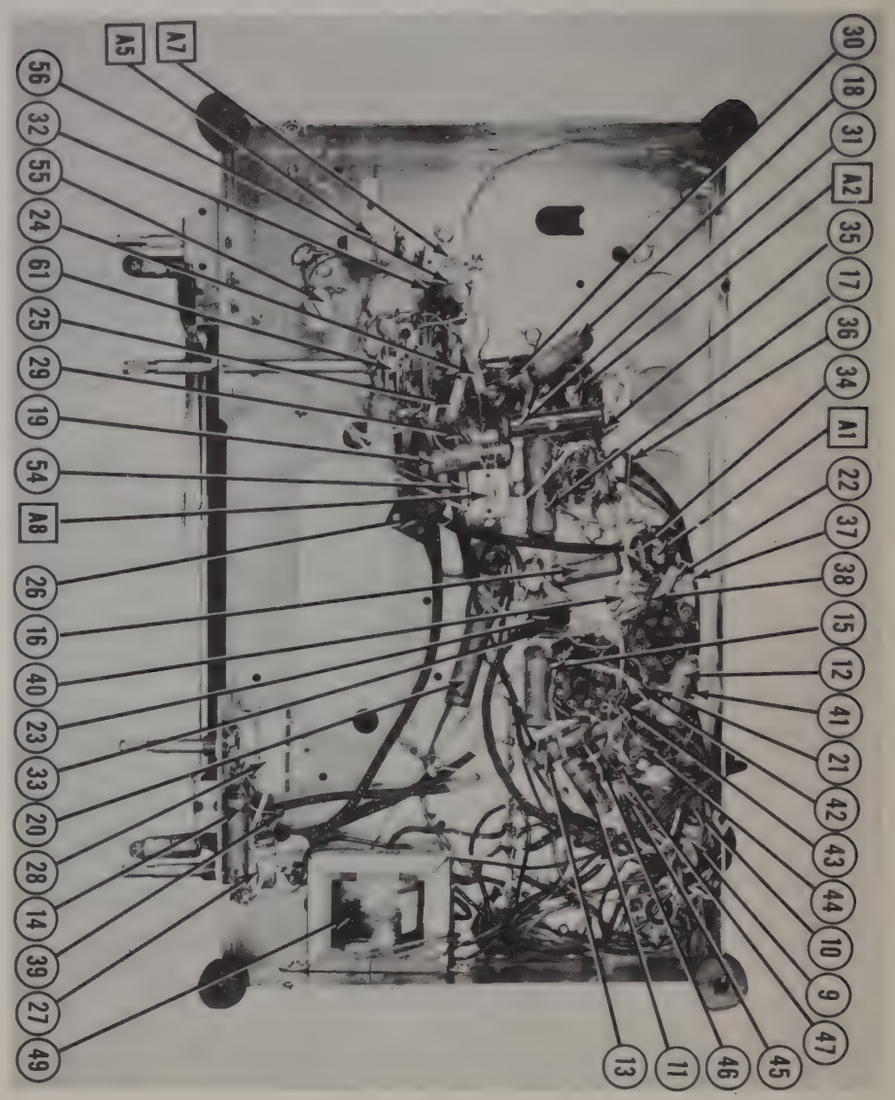
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	JENSEN PART No.		
	FIELD RES	VC IMP.		ST-441†		†Parallel field coil with 2000Ω 20 Watt resistor.
50	780Ω	3.35Ω	50B72379	Mod. G10-RS		
	CONE DIA.	VC DIA.				
51	9-3/8"	1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.
52	Loop Ant.	.1Ω	1.5Ω	24C75532	
53	SW Cabinet Ant.				
54	SW Ant.Coil	2.5Ω	0Ω		14-1044
55	BC Osc.Coil		6.5Ω		14-1040
56	SW Osc.Coil		0Ω		14-1046
57	Input IF	14Ω	12.5Ω		16-5740
58	Output IF	14Ω	16Ω		16-5742

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

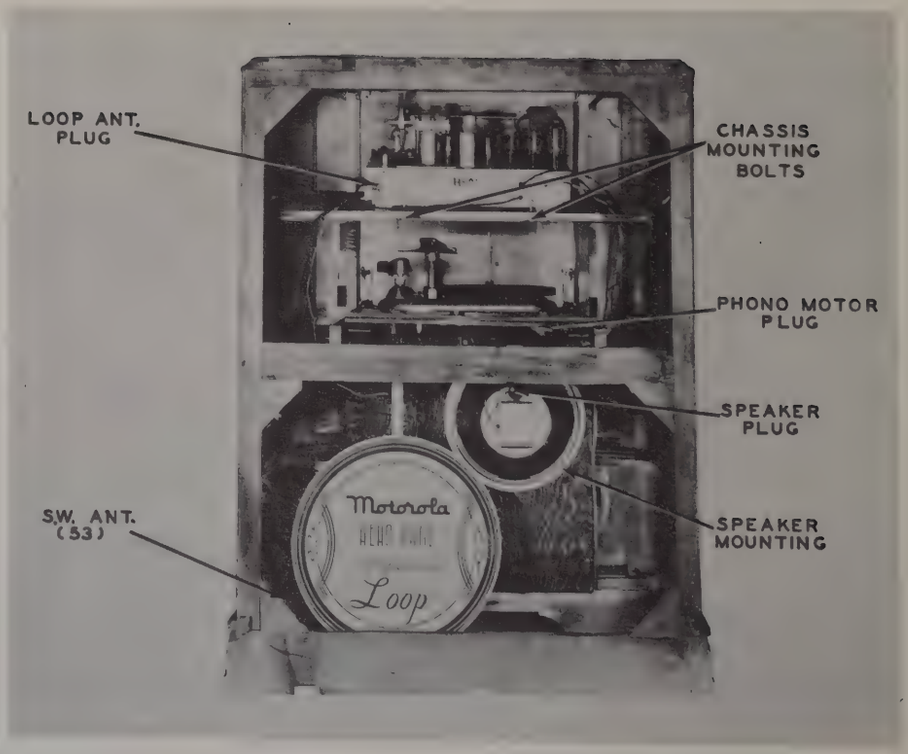
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					MOTOROLA PART No.		
59	Bayonet	7.5	0.2	White			Type 51
60	"	"	"	"			"

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
61	Switch		Band-Phono
62	2 Gang Var.Cap.		17-522MMF, 13-242MMF

DISASSEMBLY INSTRUCTIONS

1. Remove four push on type control knobs.
2. Lift up spring clamp holding loop antenna.
3. Remove loop antenna plug from chassis.
4. Remove loop antenna.
5. Remove speaker plug from speaker.
6. Remove phono-motor plug from receptacle.
7. Remove phono-pickup plug.
8. Remove two Phillips head screws from dial cover. Remove cover.
9. Remove dial pointer.
10. Remove six hex head screws holding chassis to cabinet. Remove chassis.



VOLTAGE READINGS

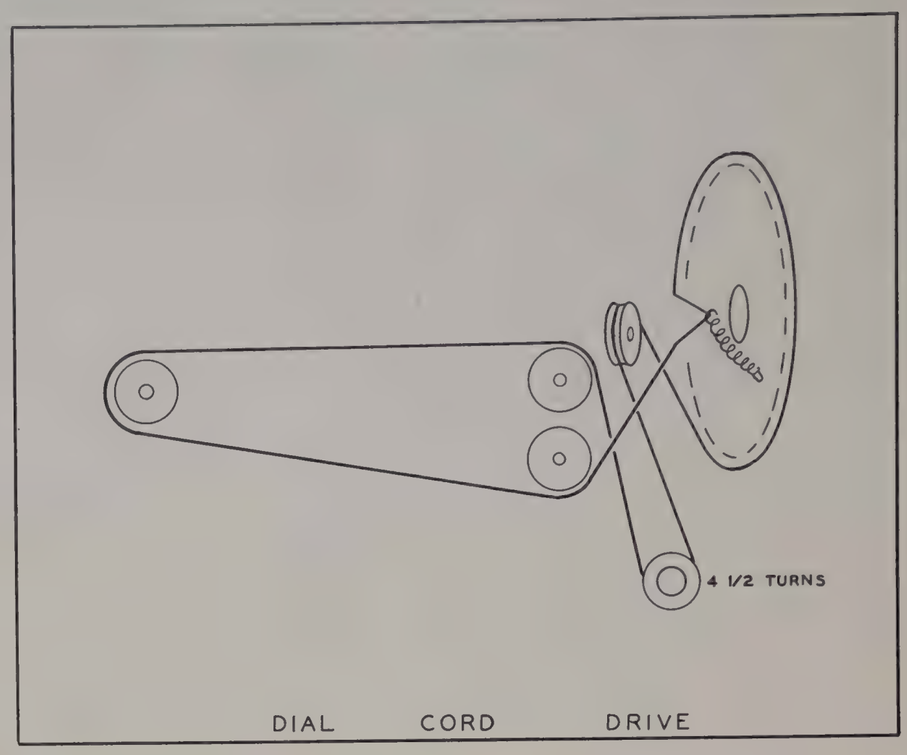
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7Q7	0V.	230V.DC	115 V.DC	-.5V.DC	0V.	-.5V. DC	0V.	6.3V.AC
2	6SQ7	0V.	0V.	0V.	-.8V.DC	0V.	120V. DC	6.3V.AC	220V.DC
3	6SQ7	0V.	-1.4V.DC	-.9V.DC	-1.4V.DC	-1.4V. DC	155V. DC	6.3V.AC	0V.
4	6SQ7	0V.	-21V.DC	-20.5V.DC	-20.5V.DC	-20.5V.DC	85V. DC	6.3V.AC	0V.
5	6K6GT	0V.	6.3V.AC	225V.DC	230V.DC	-15V.DC	-.9V. DC	0V.	0V.
6	6K6GT	0V.	6.3V.AC	225V.DC	230V.DC	-15V.DC	0V.	0V.	0V.
7	5Y3GT	0V.	310V.AC	0V.	315V.AC	0V.	315V.AC	0V.	310V.DC

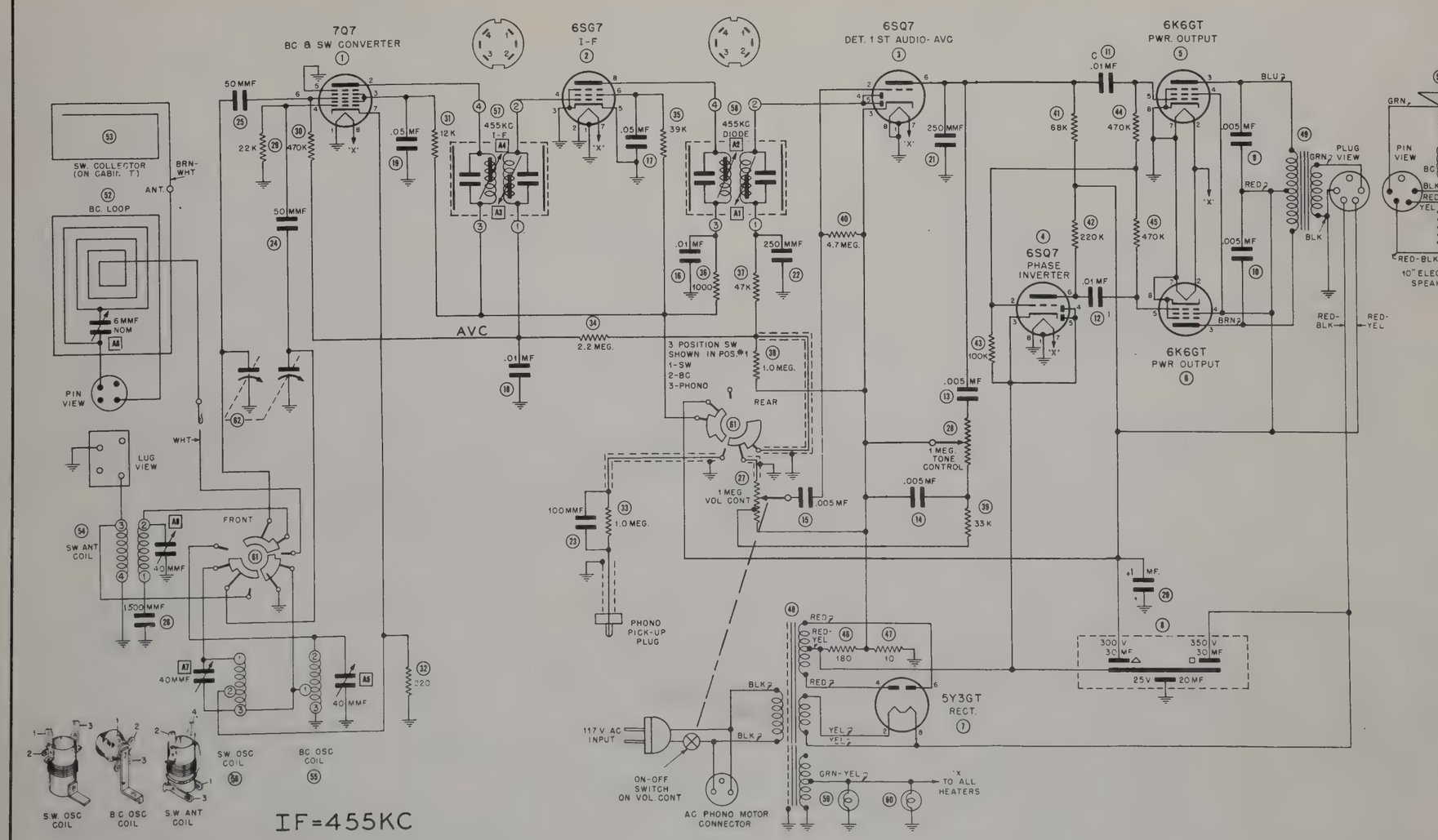
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7Q7	0Ω	85 KΩ	95 KΩ	22 KΩ	0Ω	2.5MEG.	.1Ω	.1Ω
2	6SG7	0Ω	0Ω	0Ω	2 MEG.	0Ω	125 KΩ	.1Ω	85 KΩ
3	6SQ7	0Ω	4.5MEG	10Ω	400 KΩ	400 KΩ	155 KΩ	.1Ω	0Ω
4	6SQ7	0Ω	100KΩ	200Ω	200Ω	200Ω	300 KΩ	.1Ω	0Ω
5	6K6GT	INF.	.1Ω	85KΩ	85 KΩ	520 KΩ	10Ω	0Ω	0Ω
6	6K6GT	INF.	.1Ω	85KΩ	85KΩ	520KΩ	INF.	0Ω	0Ω
7	5Y3GT	INF.	85KΩ	INF.	300Ω	INF.	290Ω	INF.	85 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.





THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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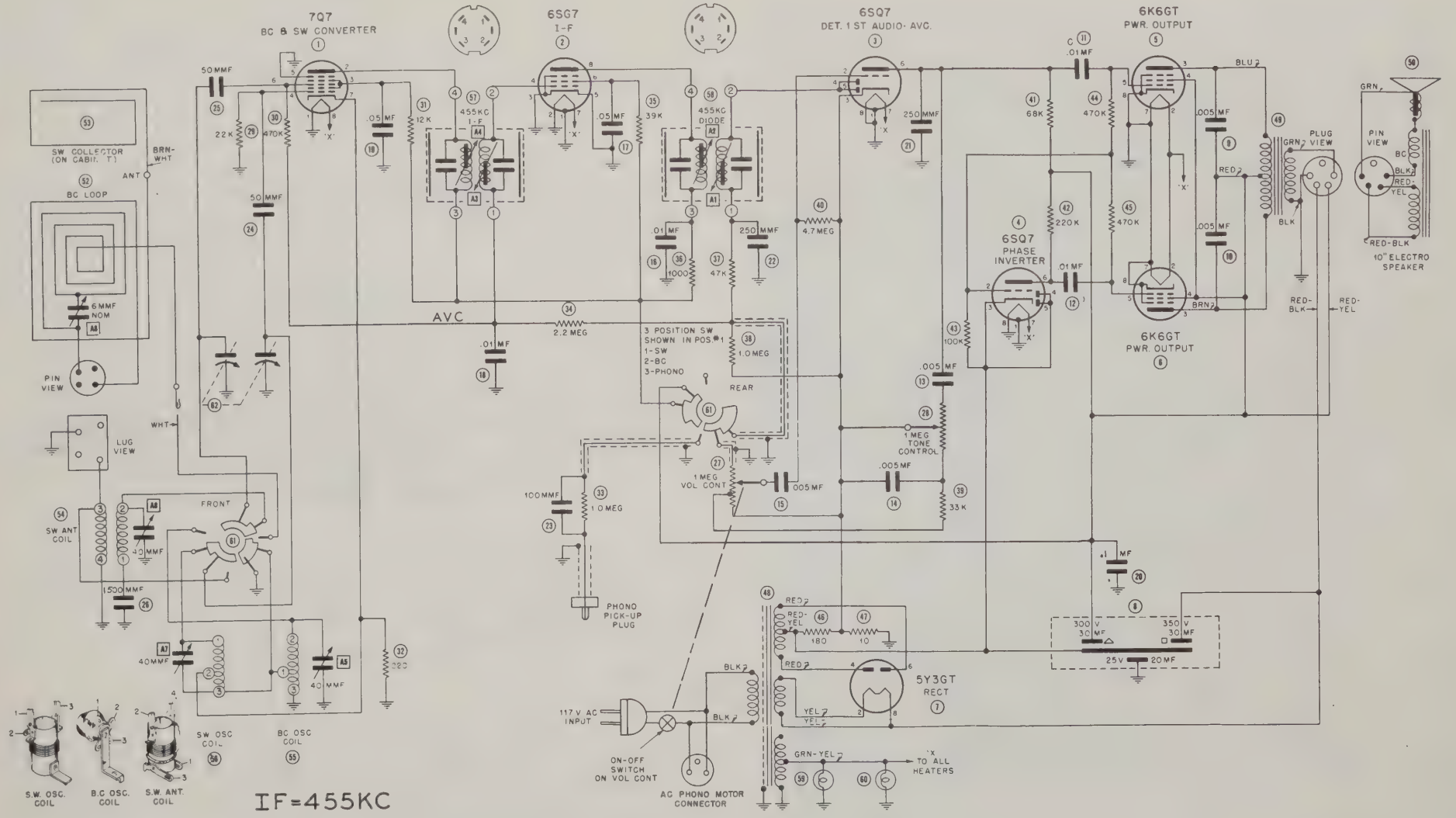
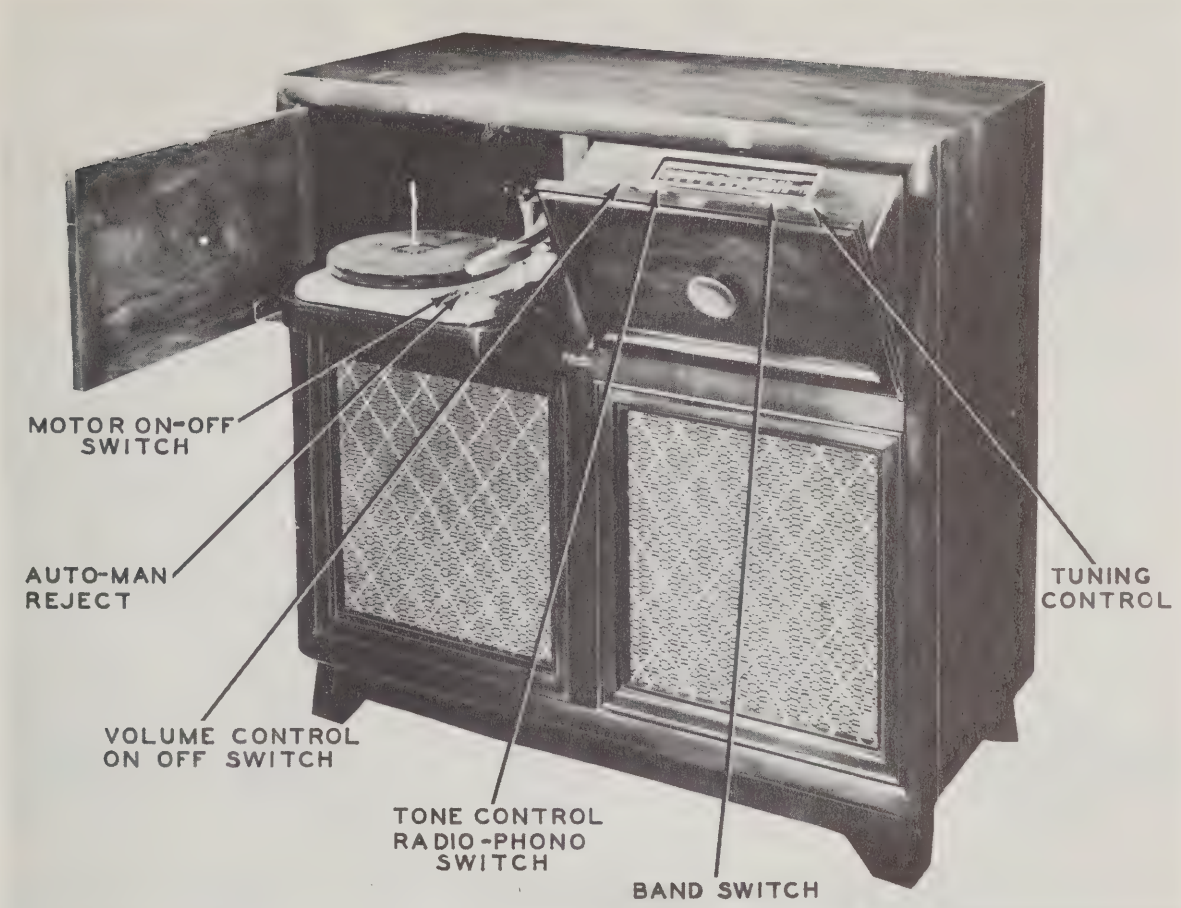


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

MOTOROLA
MODELS 95F31, 95F31B (CH. HS-39), 95F33 (CH. HS-38)

MOTOROLA
MODELS 95F31, 95F31B (CH. HS-39), 95F33 (CH. HS-38)



MOTOROLA
MODELS 95F31, 95F31B (CH. HS-39), 95F33 (CH. HS-38) PAGE 1

MOTOROLA MODEL 95F31	
TRADE NAME	Motorola, Models 95F31, 95F31B (Ch. HS-39), 95F33 (Ch. HS-38)
MANUFACTURER	Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	AC Operated Phono-Radio Combination FM-AM Superheterodyne Receiver with Self Contained Loop Antenna and Pushbutton Tuning
TUBES (NINE)	Types, 7F8 FM Converter, 7Q7 AM Converter, 6SG7 IF Amp., 6SG7 Driver, 6S8GT Ratio Det.-AM Det.-AVC-AF, 6SQ7 Phase Inverter, (2) 6K6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	.780 Amp. @ 117 Volts AC
FREQUENCY RANGES - BROADCAST	535-1620KC, SHORT WAVE 5.6-12.2MC, FREQ. MOD. 88-108MC.

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM Converter	7F8	7F8	8BW	
2	AM Converter	7Q7	7Q7	8AL	
3	IF Amp.	6SG7	6SG7	8BK	
4	Driver	6SG7	6SG7	8BK	
5	Ratio-Det.-AM Det.-AVC-AF	6S8GT	6S8GT	8CB	
6	Phase Inverter	6SQ7	6SQ7	8Q	
7	Power Output	6K6GT	6K6GT	7S	
8	Power Output	6K6GT	6K6GT	7S	
9	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
10A	30	350	23A27718		UF6BJ37	FP331	DY-311	EL-323	■ Filter
B	30	300			"				▲ "
C	20	25			BR202A				Bias Filter
11	10	100	23A75235	PRS150-10	RR1215	TC42	M-10-150	UT-121	Ratio Det. Bias
12	.1	200		484-.1	DT4P1	TP428	S-4-1	TC-1	PB Motor Bypass
13	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	Output Plate Bypass
14	.005	600		684-005	DT6D5	TP408	S-6-005	TC-25	" " "
15	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
16	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	" "
17	.005	600		684-005	DT6D6	TP408	S-6-005	TC-25	Tone Compensation
18	.005	600		684-005	DT6D6	TP408	S-6-005	TC-25	" "
19	.005	600		684-005	DT6D6	TP408	S-6-005	TC-25	Audio Coupling
20	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	RF Bypass Pwr. Supp.
21	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	IF Plate Decoupling
22	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	IF Screen Bypass
23	.01	100		484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
24	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	IF Plate Decoupling
25	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	IF Screen Bypass
26	.01	100		484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
27	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	BC Conv. Screen Bypass
28	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	FM Conv. Plate Decoup.
29	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Audio Plate Decoup.
30	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Audio Plate Bypass
31	4000	300		1467-004	1D5D4	MC463	MW.5-24	1FM-24	Ratio Det. Load
32	4000	300		1467-004	1D5D4	MC463	MW.5-24	1FM-24	" " "
33	100	500		1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Phono Coupling
34	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Diode Filter
35	50	500		1468-00005	5W5Q25	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
36	50	500		1468-00005	5W5Q25	MC225	MO.5-45	1FM-45	RF Coupling
37	1000	500		1468-001	1W5D1	MC455	MW.5-21	1FM-21	Fixed Padder
38	250								Filament Bypass
39	500	500		1469-0005	5R5T5	MCB245	MOS.5-35	MS-35	RF Coupling
40	250	500		1469-00025	5R5T25	MCB240	MOS.5-325	MS-325	" "
41	250								Fixed Padder
42	16								Fixed Trimmer Cer.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
43A	1 Meg.	1	18K74891-B	TM240	D13-137X	AT-109	Volume Control
B	Shaft		Not Req.	SS25	E.	KSS-3	Attach to 43A per instructions
C	Switch		" "	M26	41	SW-A	" " " " " "
44	1 Meg.	1	18A-28062-C				Tone Control & Radio-Phono Switch

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
45	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st FM Converter Grid
46	15KΩ	1		BTA-15K	Br.-Grn.-Or. 1st FM Converter Plate Load
47	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. 2nd FM Converter Grid
48	15KΩ	½		BTS-15K	Br.-Grn.-Or. 2nd FM Converter Plate Decoupling
49	33KΩ	½		BTS-33K	Or.-Or.-Or. 2nd FM Converter Plate Bleeder
50	22KΩ	½		BTS-22K	Red-Red-Or. Voltage Dropping
51	39KΩ	1		BTA-39K	Or.-White-Or. 1st IF Screen Dropping
52	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
53	1000Ω	½		BTS-1000	Br.-Blk.-Red 1st IF Plate Decoupling
54	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode RF Filter
55	150KΩ	½		BTS-150K	Br.-Grn.-Yl. 2nd IF Grid
56	220Ω	½		BW-½-220	Red-Red-Br. Parasitic Suppressor
57	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AM Converter Grid
58	22KΩ	½		BTS-22K	Red-Red-Or. AM Oscillator Grid
59	12KΩ	2		BT-2-12K	Br.-Red-Or. AM Converter Screen Dropping
60	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
61	22KΩ	½		BTS-22K	Red-Red-Or. AVC Network
62	22KΩ	½		BTS-22K	Red-Red-Or. Ratio Detector Bias Network
63	10KΩ	½		BTS-10K	Br.-Blk.-Or. " " " "
64	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
65	68KΩ	½		BTS-68K	Blue-Gray-Or. AF Plate Load
66	33KΩ	½		BTS-33K	Or.-Or.-Or. Tone Compensation
67	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Series Phono
68	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Phase Inverter Grid
69	220KΩ	½		BTS-220K	Red-Red-Yl. Phase Inverter Plate Load
70	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
71	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
72	180Ω	2		BW-2-180	Br.-Gray-Br. Bias
73	10Ω	½		BW-½-10	Br.-Blk.-Blk. "
74	2.7Ω	½		BW-½-2.7	Red-Vi.-Gold Series Pilot Light-See Note
75	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AF Plate Decoupling-See Note

Note-Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	THORDARSON PART No.
76	117V AC @ .78A	640V CT @ .093A	5.2V AC @ 1.9A	25V AC @ 5.0A tapped @ 6.4V AC @ 3.0A	25075489		

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.	INSTALLATION NOTES
77	9000Ω CT	3.35Ω	570Ω CT	.3Ω	25K74076	A-3824	T22S56	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: MOTOROLA PART No.	JENSEN PART No.		INSTALLATION NOTES
78	FIELD RES. 780Ω	VC IMP. 3.35Ω	50B72379	ST-441* Mod.G10-RS		*Parallel Field Coil with 2000Ω 20W resistor.
	CONE DIA. 9-3/8"	VC DIA. 1"				
79			NOT READILY	REPLACEABLE-USE COMPLETE SPEAKER UNIT		

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

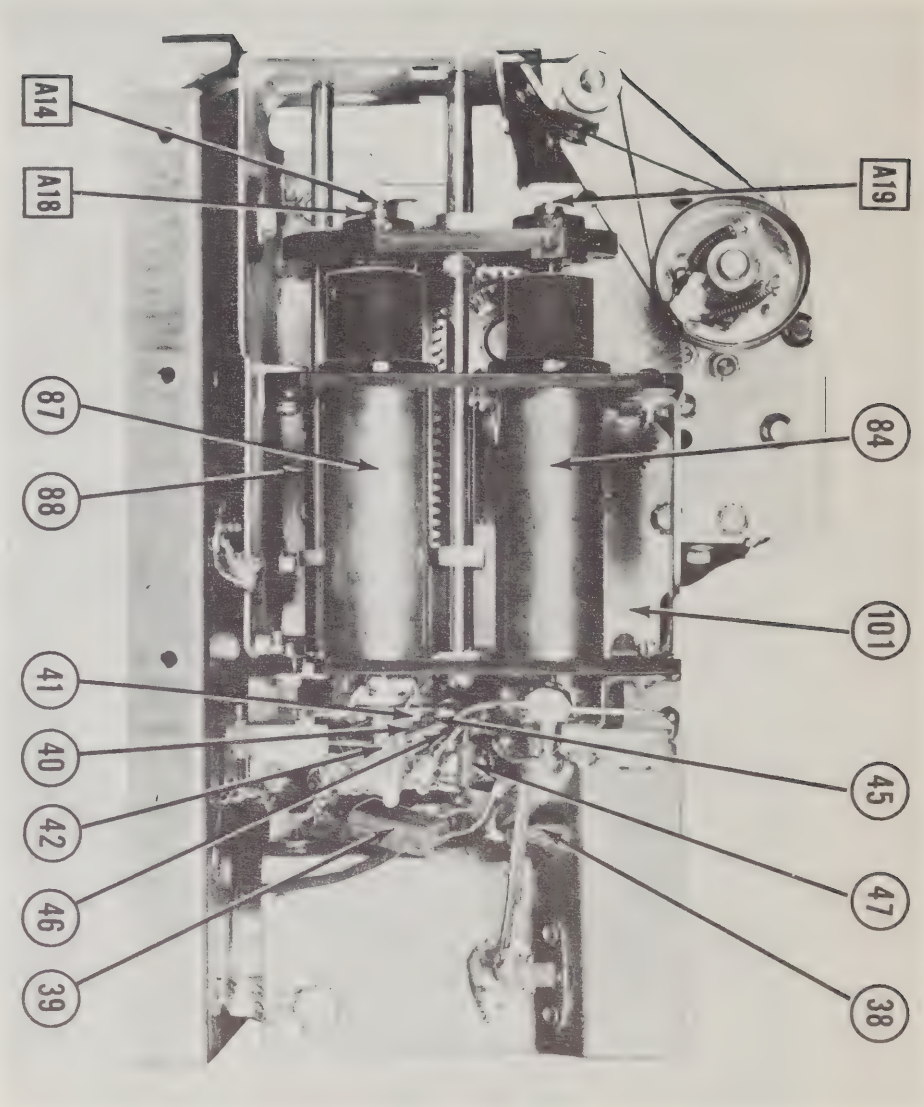
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	
80	BC Loop Ant.	.1Ω	1.5Ω	24K76103		
81	FM Loop Ant.		0Ω			
82	SW Ant.					
83	SW Ant.Coil	2.5Ω	0Ω		14-1044	
84	FM Ant.Coil		0Ω			Items 84, 87 & 88 are slug tuned, ganged, and part of FM tuning assy.
85	BC Osc.Coil		5.8Ω		14-1040	
86	SW Osc.Coil		0Ω		14-1046	
87	FM Osc.Coil		0Ω			
88	FM Variable IF Coil		0Ω			
89	Fil. RF Choke		.1Ω			
90	AM Input IF	11Ω	12.5Ω			
91	AM OutputIF	14Ω	14Ω			
92	FM Input IF	2Ω	2.2Ω			
93	FM OutputIF	.8Ω	.8Ω			
94	FM Disc.Coil	2.3Ω	3Ω			

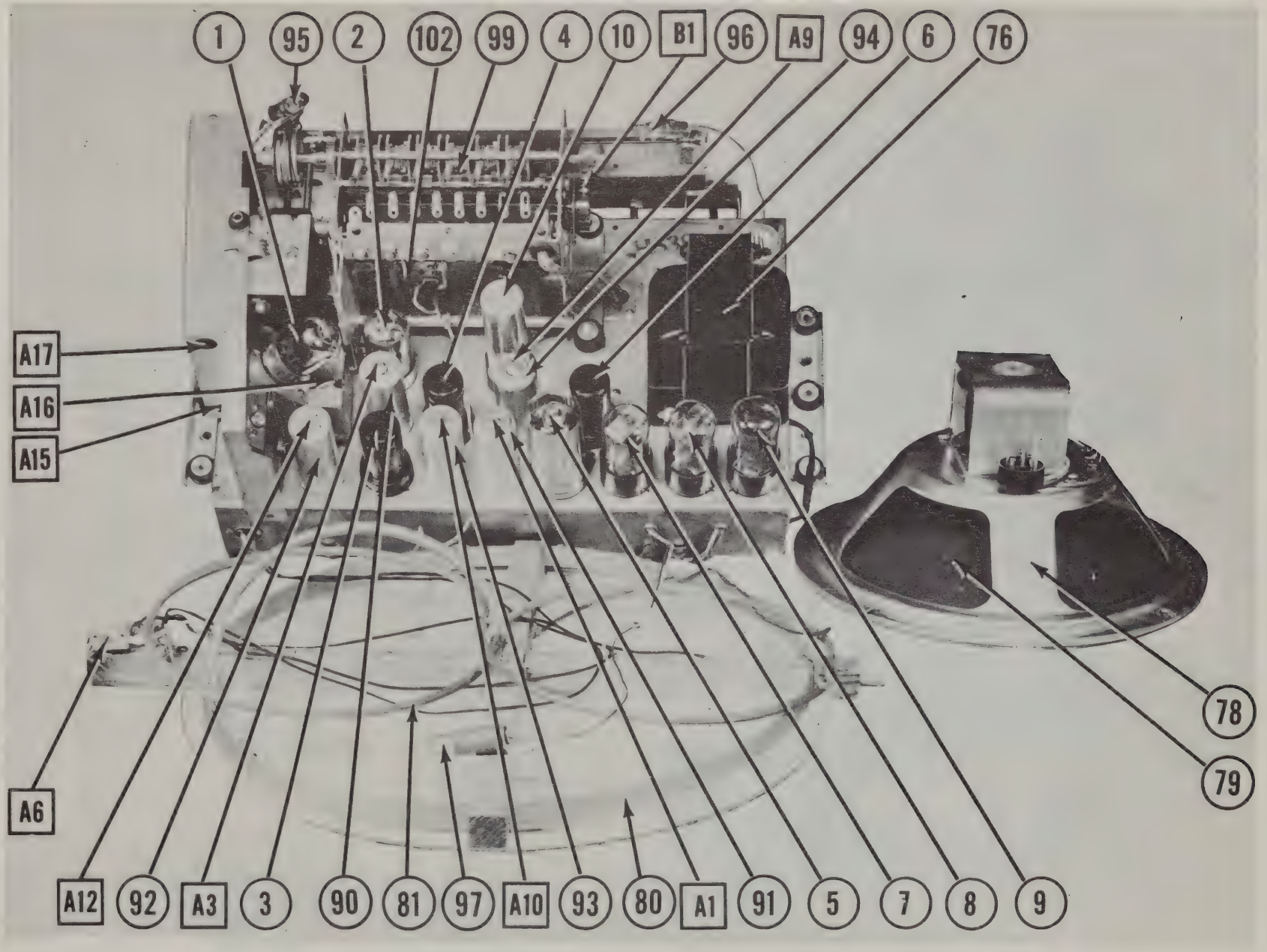
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA	INSTALLATION NOTES
95	Bayonet	6.3	0.15	Brown			Type 47
96	"	"	"	"			"
97	"	"	"	"			" (Used in Model 95F31)

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
98	Band Switch		
99	Pushbutton Assy.		
100	Muting Switch		
101	FM Tuning Assy.		
102	2 Gang Var.Cap.		20-527 MMF, 15-242 MMF

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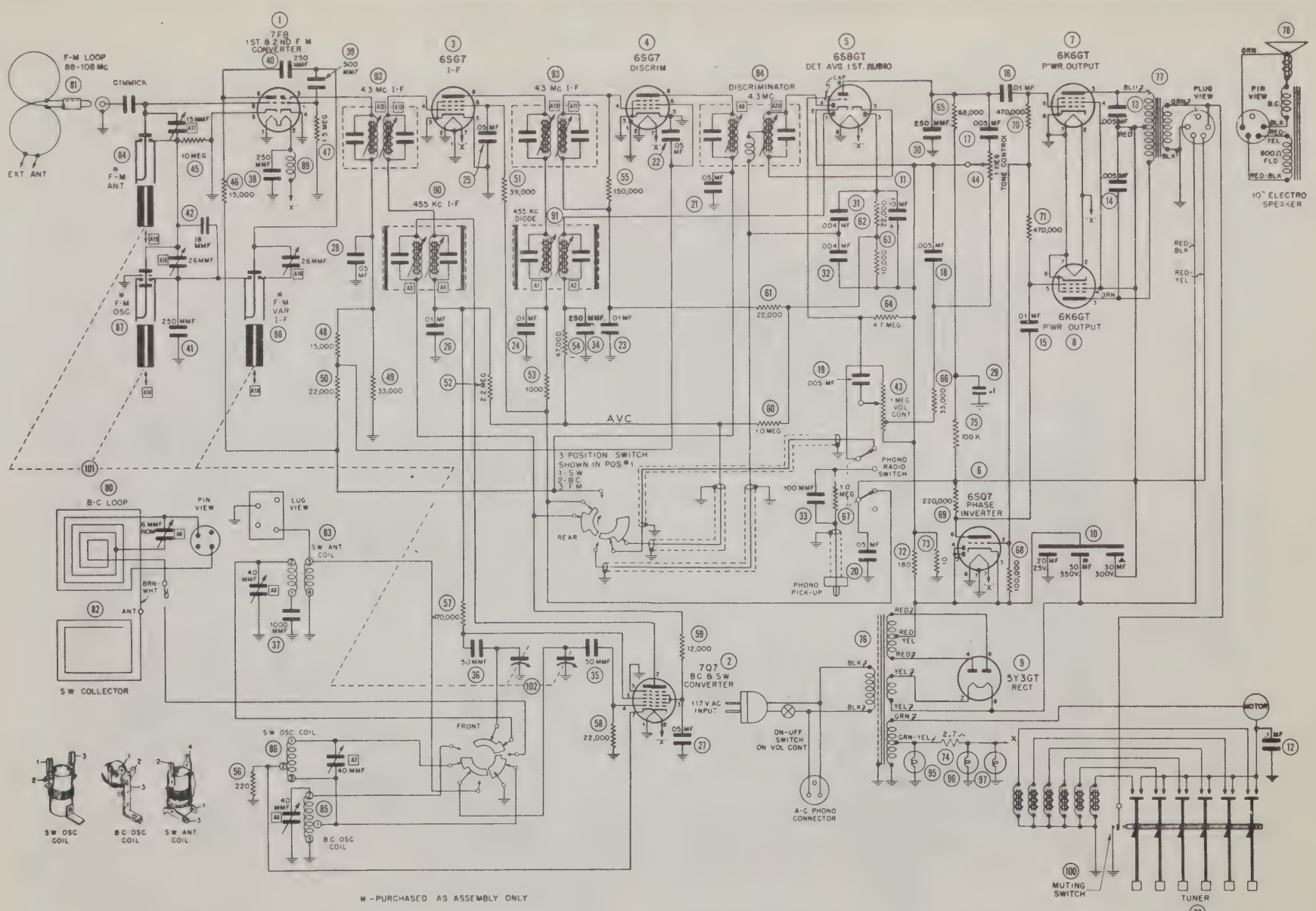


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

* BAND SWITCH IN FM POSITION

RADIO-PHONO SWITCH IN RADIO POSITION.

VOLTAGE READINGS

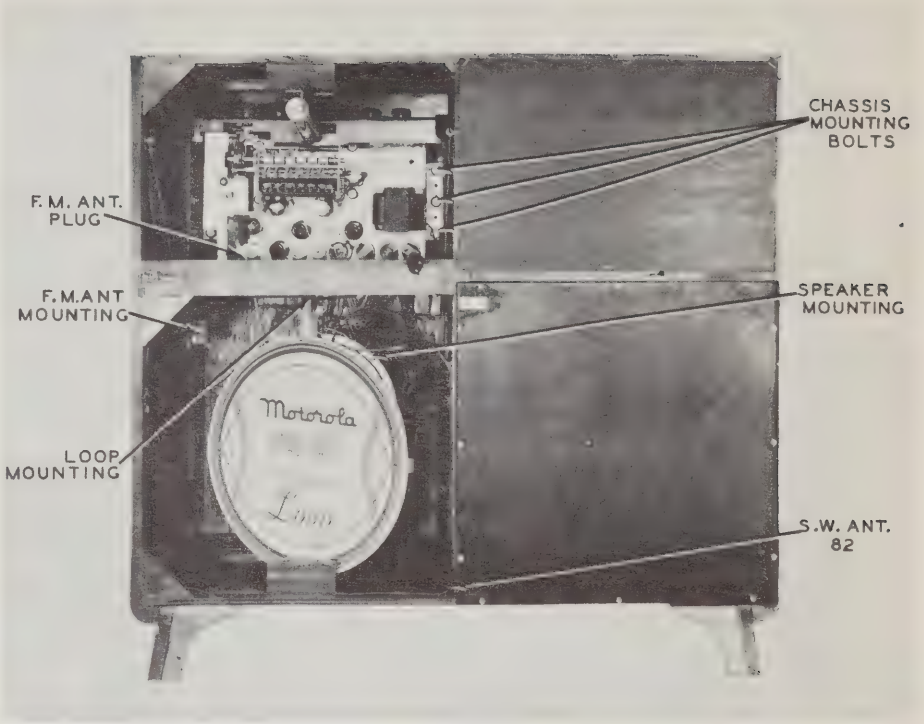
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	7F8	0V.	6.4V. AC	*62V. DC	0V.	0V.	*137V. DC	0V.	0V.	
2	7Q7	0V.	230V. DC	117V. DC	-.1V. DC	0V.	-.2 V. DC	0V.	6.4V. AC	
3	6SG7	0V.	0V.	0V.	-.7V. DC	0V.	115V. DC	6.4V. AC	220V. DC	
4	6SG7	0V.	0V.	0V.	-.7V. DC	0V.	*110V. DC	6.4V. AC	*230V. DC	
5	6S8GT	-1.1V. DC	-.95V. DC	-1V. DC	0V.	0V.	120V. DC	6.4V. AC	0V.	-1.2V. DC
6	6SQ7	0V.	-19V. DC	-19V. DC	-19V. DC	-19V. DC	63V. DC	6.4V. AC	0V.	
7	6K6GT	0V.	6.4V. AC	230V. DC	240V. DC	-13.5V. DC	-.95V. DC	0V.	0V.	
8	6K6GT	0V.	6.4V. AC	230V. DC	240V. DC	-13V. DC	0V.	0V.	0V.	
9	5Y3GT	0V.	320V. DC	0V.	320V. AC	0V.	320V. AC	0V.	320V. DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	7F8	1.5MEG	.1Ω	33KΩ	0Ω	0Ω	80 KΩ	0Ω	10 MEG.	
2	7Q7	0Ω	1 MEG.	1 MEG.	20 KΩ	0Ω	1.1MEG.	1Ω	.1Ω	
3	6SG7	0Ω	0Ω	0Ω	3 MEG.	0Ω	1 MEG.	.1Ω	1 MEG.	
4	6SG7	0Ω	0Ω	0Ω	30 KΩ	0Ω	50 KΩ	.1Ω	1 MEG.	
5	6S8GT	500 KΩ	10Ω	30 KΩ	INF.	INF.	1.1 MEG.	.1Ω	0Ω	5 MEG.
6	6SQ7	0Ω	100 KΩ	200Ω	200Ω	200Ω	1.3MEG.	.1Ω	0Ω	
7	6K6GT	INF.	.1Ω	1 MEG.	1 MEG.	600KΩ	10Ω	0Ω	0Ω	
8	6K6GT	INF.	.1Ω	1 MEG.	1 MEG.	580KΩ	INF.	0Ω	0Ω	
	5Y3GT	INF.	1 MEG.	INF.	250Ω	INF.	260Ω	INF.	1 MEG.	

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



PUSHBUTTON ADJUSTMENTS

1. Turn on receiver and allow it to warm up for approximately 15 minutes.
2. Loosen B1 a couple turns.
3. Carefully tune in first desired station. Hold tuning control knob and depress pushbutton, holding it in until mechanism stops.
4. Follow same procedure as given in Step 3 for setting remaining buttons.
5. After all buttons are set tighten B1 firmly.

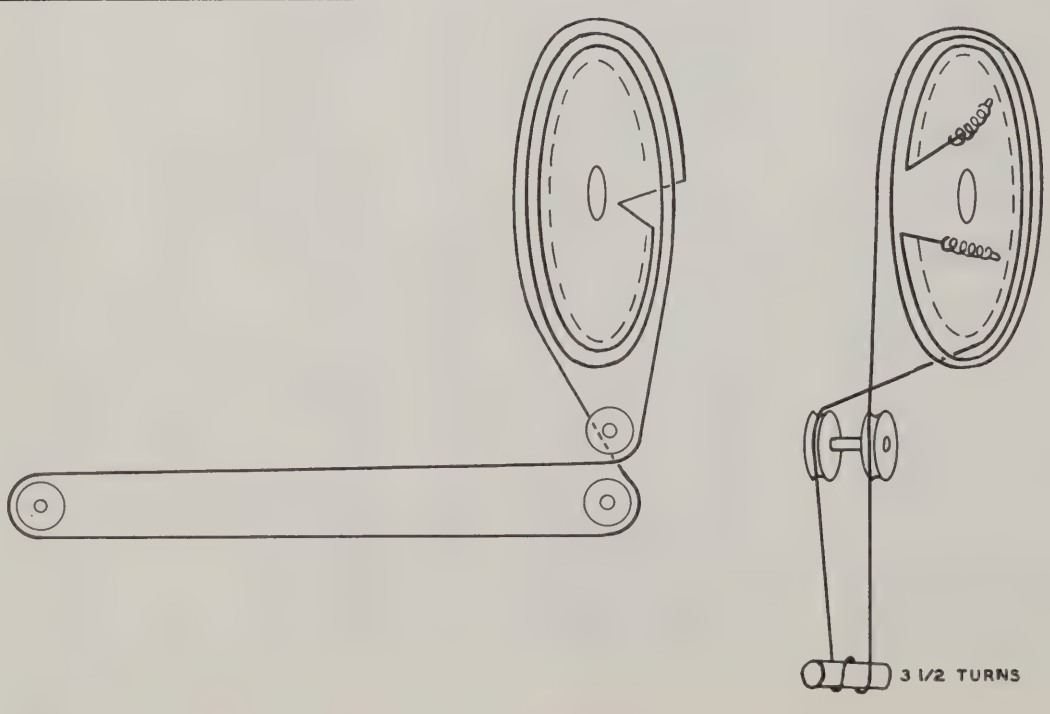
DISASSEMBLY INSTRUCTIONS

1. Remove four push on type control knobs.
2. Remove twelve wood screws holding cover board on back of cabinet.
3. Disconnect plug on phono-motor lead.
4. Disconnect plug on phono-pickup lead.
5. Remove two staples holding phono motor & phono-pickup leads to inside of cabinet.
6. Remove brown lead from loop antenna going to clip on cabinet.
7. Remove loop antenna plug from chassis.
8. Remove white lead from clip on loop antenna.
9. Lift up spring clamp holding loop antenna. Remove loop antenna.
10. Remove speaker plug from speaker.
11. Remove four hex nuts holding speaker to cabinet. Remove speaker.
12. Remove four hex head screws holding FM antenna.
13. Remove two leads from FM Antenna to clips on cabinet.
14. Remove large lead from FM Antenna from chassis.
15. Remove FM Antenna.
16. Remove dial light from clamp on cabinet.
17. Remove six hex head screws holding chassis to cabinet. Remove chassis.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

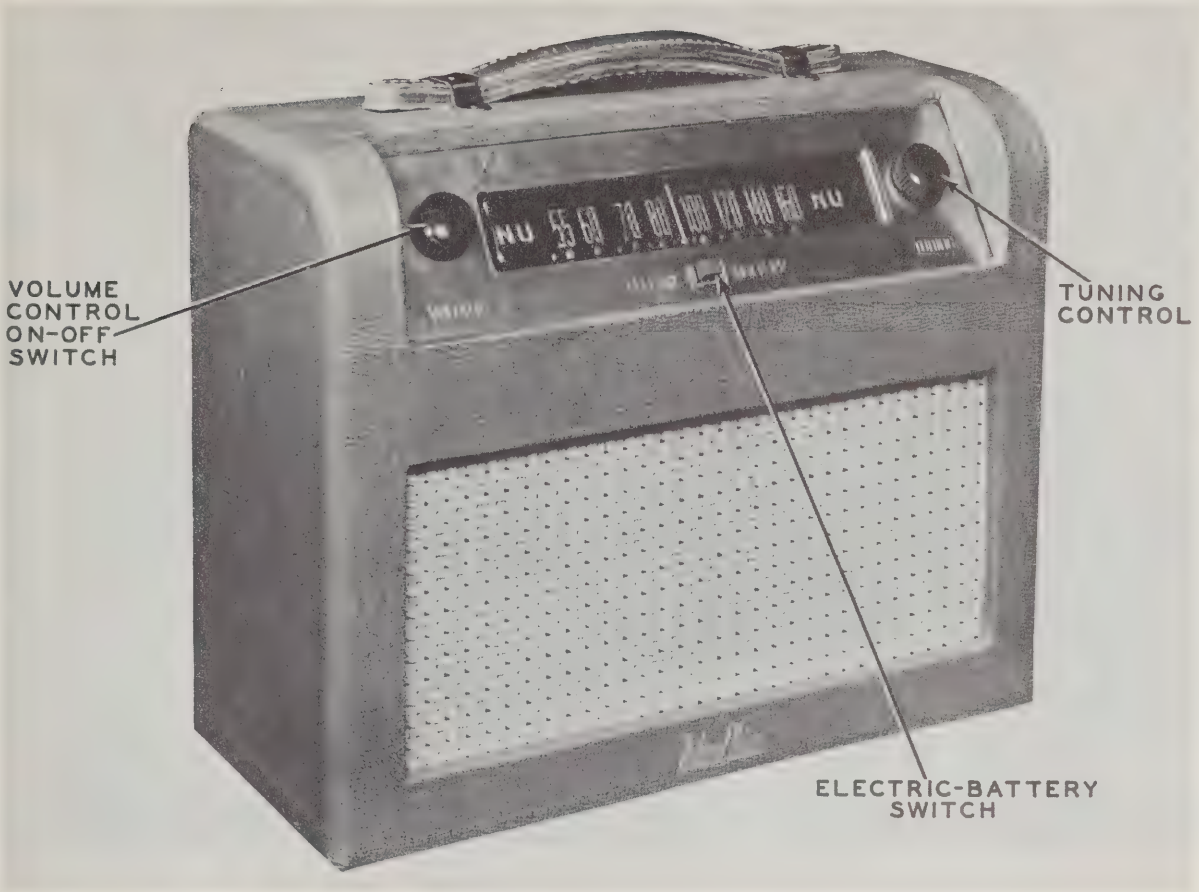
To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Use a 30% Amplitude modulated signal throughout entire alignment. Once the discriminator secondary has been aligned (A20) no further adjustments of the FM circuits should be made. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to pin 4 (Grid) of 7Q7. Low side to chassis.	455KC	BC	Tuning cap. fully open.	Across the voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2	.1 MFD.	"	1400KC	"	1400KC	"	A5	" " " "
3		Loop	"	"	Tune for maximum output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4	.1 MFD.	Same as Step 1	11.5MC	SW	11.5MC	"	A7	Adjust for maximum output. Check for image by tuning signal generator to approximately 12.4MC. If signal is not heard reset signal generator to 11.5 MC and loosen A7 until next peak is obtained. Adjust for maximum output.
5	50MMFD.	High side to ext. ant. lead. Low side to chassis.	11.5MC	"	Tune for maximum output.	"	A8	Disconnect BC loop. Adjust for maximum output while rocking tuning cap.
6	.001MFD.	High side to Pin 1 (Grid) of 7F8. Low side to chassis.	4.3MC	FM	112MC	"	A9, A10, A11, A12, A13.	Turn A20 out completely. Adjust A9, A10, A11, A12, A13 for maximum output.
7	DIRECT	Remove FM Loop. Connect signal generator across FM loop receptacle.		"		"	A14	Set spacing between end of core and bakelite piece, to which it is mounted, to 1/32".
8	DIRECT	"	90MC	"	90MC	"	A15,A16, A17	Adjust for maximum output.
9	DIRECT	"	105MC	"	105MC	"	A14,A18, A19	Adjust for maximum output. Repeat steps 8 & 9 until no further increase in output is obtained making Step 9 the final adjustment.
10		Loop	"	"	Tune for maximum output.	"	A19	Connect FM loop to receiver. Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
11	.001MFD	Same as Step 6.	4.3MC	"	112MC	"	A20	Adjust for zero output.



DIAL CORD DRIVES

NATIONAL UNION
MODEL G-613 (BATTERY OPERATED)



NATIONAL UNION
MODEL G-613 (BATTERY OPERATED)

NATIONAL UNION MODEL G-613

TRADE NAME	National Union, Model G-613 "Commuter"
SUPPLIER	National Union Radio Corp., Newark 2, New Jersey
TYPE SET	Three Power Portable Superheterodyne with Loop Antenna
TUBES (SIX)	Types, 1A7GT Converter, 1N5GT 1st IF Amp., 1N5GT 2nd IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier.
POWER SUPPLY RATING	105-120 Volts AC or 9 Volt "A" Supply & 90 Volt "B" Supply .300 Amp. @ 117 Volts AC or 56 MA @ 9.3 Volts DC & 11MA @ 94 Volts DC
TUNING RANGE—BROADCAST	540-1650KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a capacitor in series with the low side of the signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, Output of signal generator should be no higher than is necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD.	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy ant. to 200MMF to reduce hum modulation.
2		Loop	1700KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1550KC	Tune for maximum output.	"	A6	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. **Indianapolis, Indiana**

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PARTS LIST AND DESCRIPTIONS

NATIONAL UNION
MODEL G-613

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: NATIONAL UNION PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1A7GT	1A7GT	7Z	
2	1st IF Amp.	1N5GT	1N5GT	5Y	
3	2nd IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NATIONAL UNION PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	CE1-4A81	AF101010D4A	UP9DJ48	FP410	DY-419	EL-452	● Filter
B	40	150							▲ "
C	40	150							■ "
D	20	25							Filament Bypass
8	25	25		PRS25-25	BR252A	TC26	M-25-25	TA-25	" "
9	.1	400		484-.1	DT4P1	TP428	S-4-1	TC-1	Line Filter
10	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	Filament Bypass
11	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
12	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	" "
13	.25	400		484-.25	DT4P25	TP430	S-4-25	TC-2	Line Isolation
14	.002	600		684-002	DT6D2	TP405	S-6-002	TC-22	Output Plate Bypass
15	.002	600		684-002	DT6D2	TP405	S-6-002	TC-22	Audio Coupling
16	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	" "
17	.05	200		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
18	.25	400		484-.25	DT4P25	TP430	S-4-25	TC-2	RF Bypass Pwr. Supp.
19	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
20	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Conv. Screen Bypass
21	.05	400		484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
22	100	500		1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Audio Plate Bypass
23	100	500		1468-0001	5W5T1	MC235	MO.5-31	1FM-31	IF Coupling
24	100	500		1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Osc. Grid Capacitor

CONTROLS

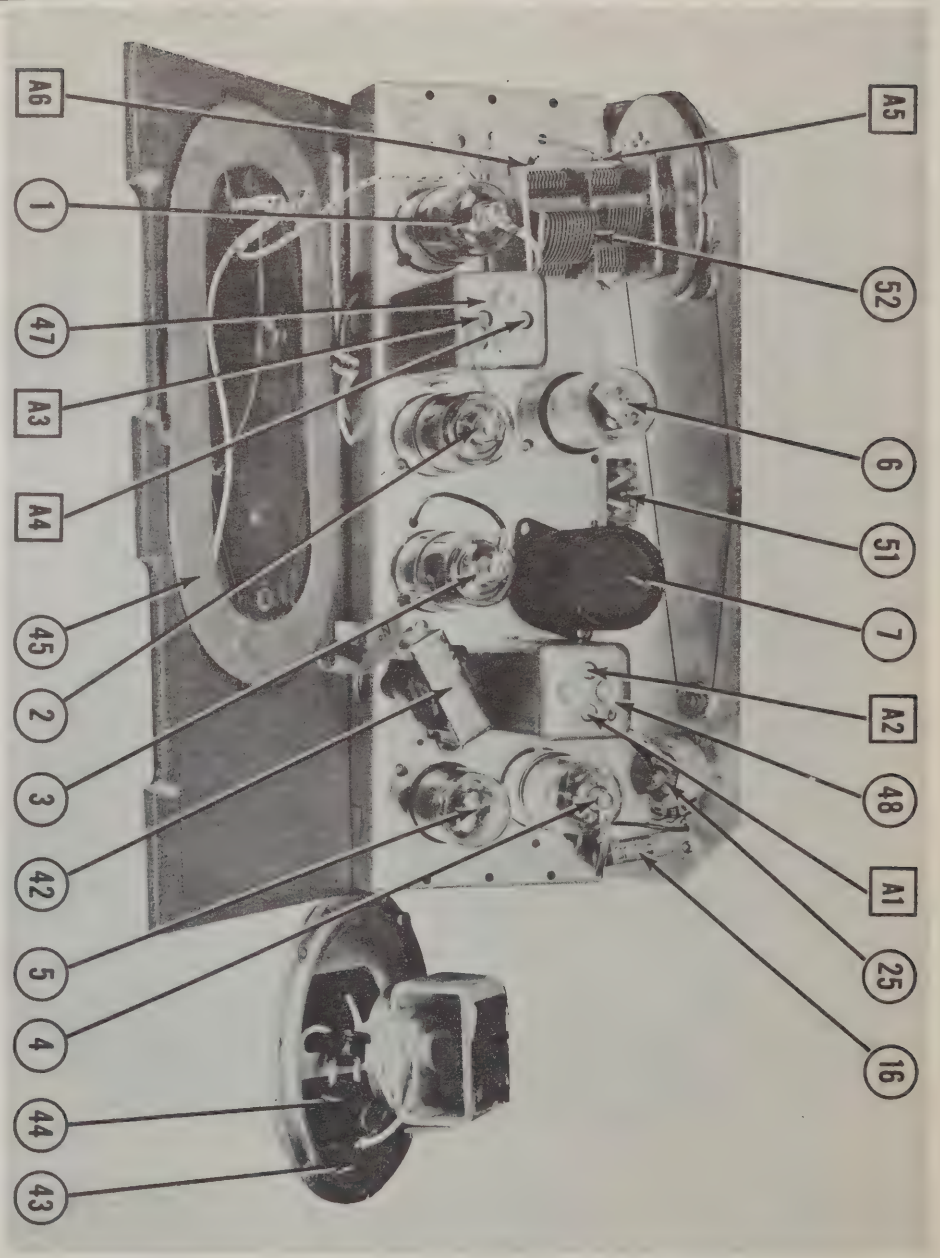
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NATIONAL UNION PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	500KΩ	1	RP5-2	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 25A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NATIONAL UNION PART No.	IRC PART No.	IDENTIFICATION CODES
26	220KΩ	½		BTS-220K	Red-Red-Yl. Oscillator Grid
27	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Converter Screen Dropping
28	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
29	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. " "
30	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
31	10KΩ	½		BTS-10K	Br.-Blk.-Or. IF Plate Load
32	15KΩ	½		BTS-15K	Br.-Grn.-Or. 2nd IF Grid
33	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid - See Note 1
34	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AF Plate Load
35	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. Output Grid
36	820Ω	½		BTS-820	Gray-Red-Br. Filament String
37	820Ω	½		BTS-820	Gray-Red-Br. " "
38A	1200Ω	10	RW-2		" "
B	1200Ω				" " -See Note 2
39	150Ω	1		BW-1-150	Br.-Grn.-Br. " " -See Note 3
40	2200Ω	1		BTA-2200	Red-Red-Red Filter
41	15Ω	½		BW-½-15	Surge Limiter

Note 1 - Some models use 3.9 Meg. in this application. IRC replacement BTS-3.9 Meg.
Note 2 - Some models use 1350Ω in this application.
Note 3 - Not used in Models using 1350Ω in Item 38B.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NATIONAL UNION PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
42	7000Ω	3.2Ω	460Ω	.44Ω	TA-7-3	A-3878	T22847		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			NATIONAL UNION PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-107		
43	PM	3.2Ω	EH6-3	Mod. P5-V		
	CONE DIA.	VC DIA.				
44	4½"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

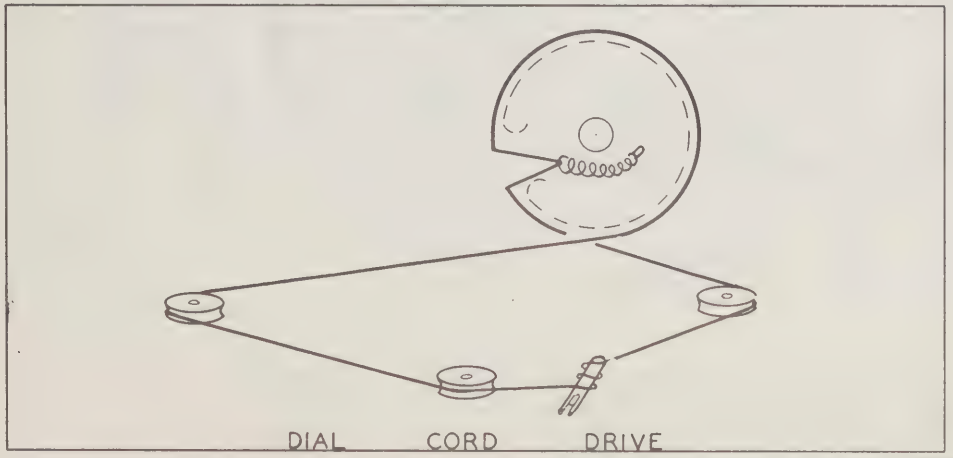
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	NATIONAL UNION PART No.	MEISSNER PART No.
45	Loop Ant.		1.3Ω	LL-3	
46	Osc. Coil	1.5Ω	6.5Ω	LO-1	14-1040
47	Input IF	21Ω	19.5Ω	TM2-12	16-6658
48	Output IF	20Ω		TM2-13	16-6670

BATTERIES

ITEM No.	VOLTAGE	NATIONAL UNION PART No.	EVEREADY			INSTALLATION NOTES
			"A"	"B"	"A-B"	
49	9 V "A"	(2) A835	(2)#746			Two 4½ Volt Batteries in Series
50	90 V "B"	(2) B862		(2)#482		Two 45 Volt Batteries in Series

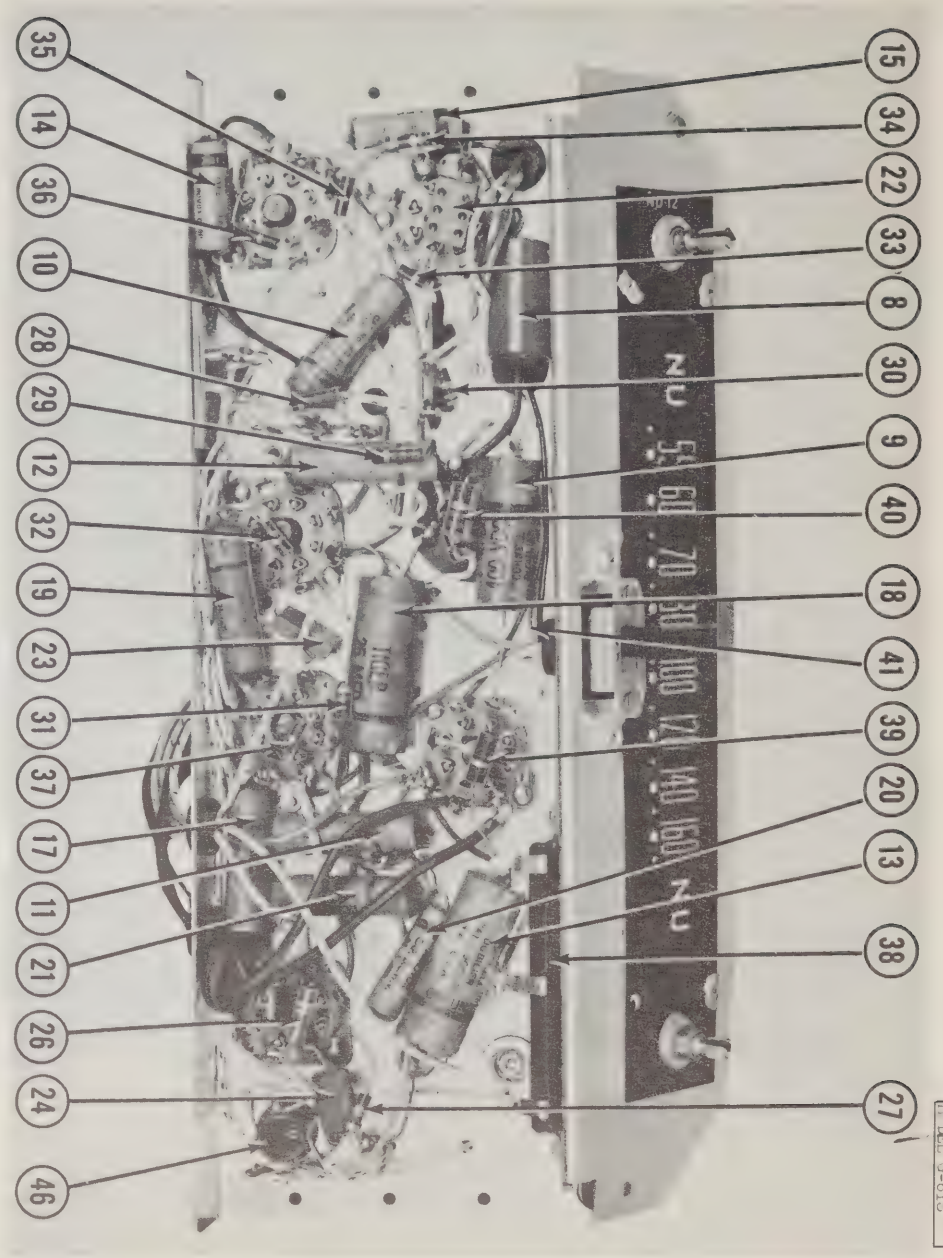
MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL UNION PART No.	NOTES
51	Switch	SS-1	Power Change-Over
52	2 Gang Var. Cap.	CV-6	28-458 MMF, 30-199 MMF
	Dial Scale	ND-12	
	Pointer	NP-3	



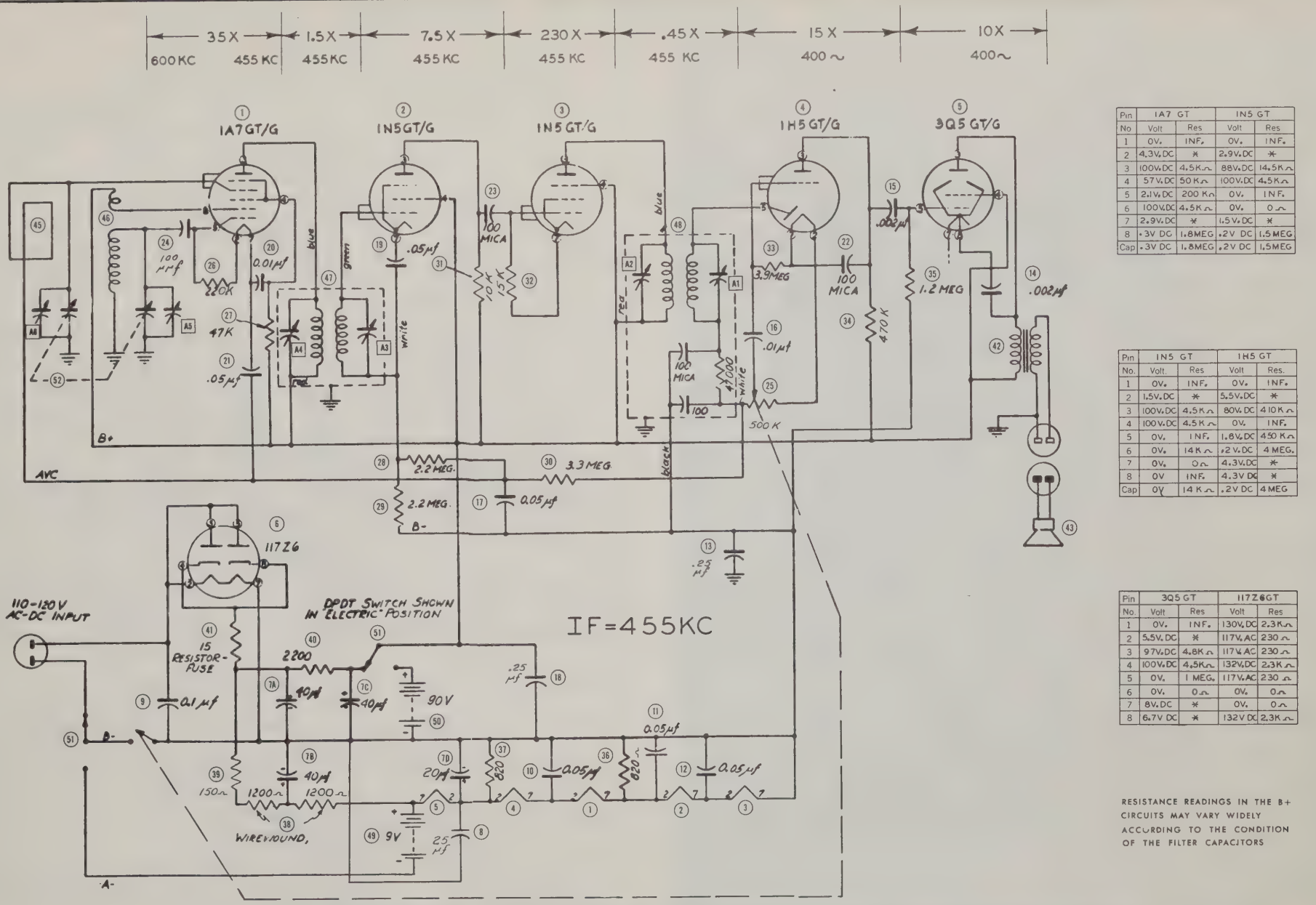
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



NATIONAL UNION
MODEL G-612

NATIONAL UNION
MODEL G-612



Pin No	1A7 GT Volt	1A7 GT Res	1N5 GT Volt	1N5 GT Res
1	0V.	INF.	0V.	INF.
2	4.3V.DC	*	2.9V.DC	*
3	100V.DC	4.5K Ω	88V.DC	14.5K Ω
4	57V.DC	50K Ω	100V.DC	4.5K Ω
5	2.1V.DC	200 K Ω	0V.	INF.
6	100V.DC	4.5K Ω	0V.	0 Ω
7	2.9V.DC	*	1.5V.DC	*
8	.3V DC	1.8MEG.	.2V DC	1.5MEG
Cap	.3V DC	1.8MEG.	.2V DC	1.5MEG

Pin No.	1N5 GT Volt.	1N5 GT Res	1H5 GT Volt	1H5 GT Res.
1	0V.	INF.	0V.	INF.
2	1.5V.DC	*	5.5V.DC	*
3	100V.DC	4.5K Ω	80V.DC	410K Ω
4	100V.DC	4.5K Ω	0V.	INF.
5	0V.	INF.	1.8V.DC	450 K Ω
6	0V.	14K Ω	.2V.DC	4 MEG.
7	0V.	0 Ω	4.3V.DC	*
8	0V	INF.	4.3V DC	*
Cap	0V	14 K Ω	.2V DC	4 MEG

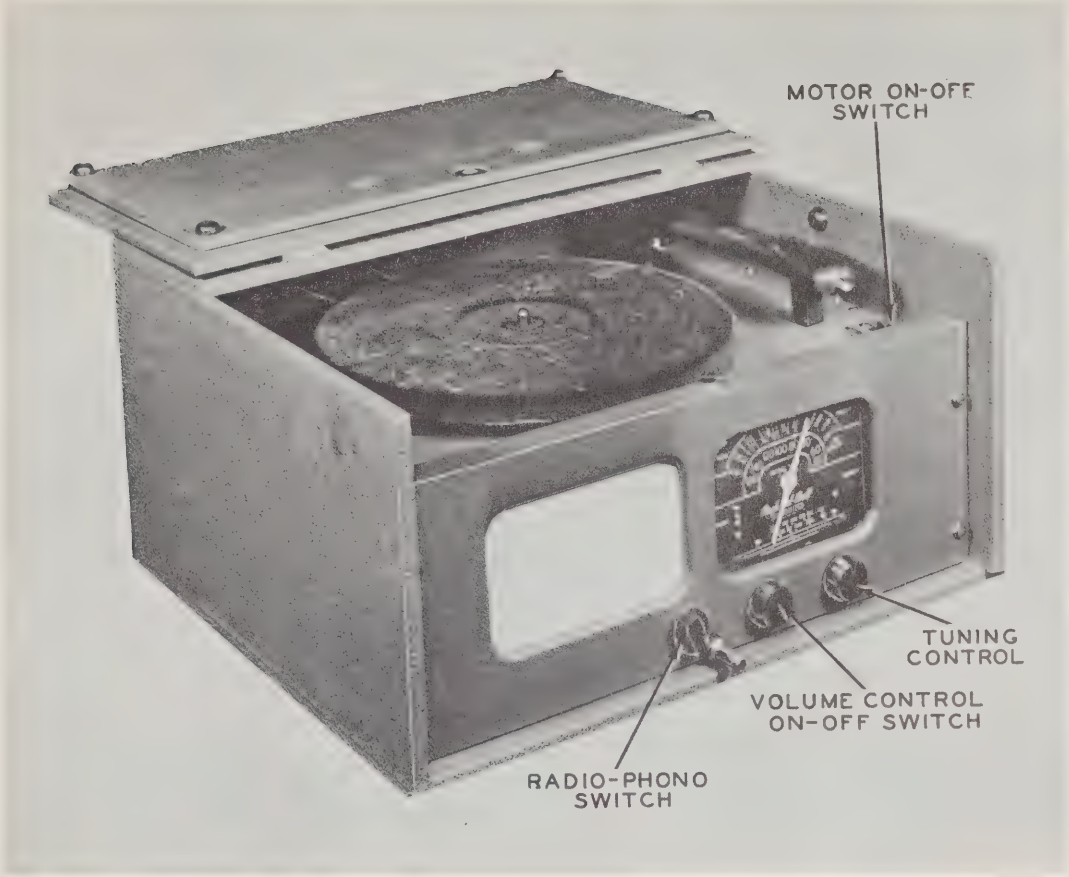
Pin No.	3Q5 GT Volt	3Q5 GT Res	117Z6GT Volt	117Z6GT Res
1	0V.	INF.	130V.DC	2.3K Ω
2	5.5V.DC	*	117V.AC	230 Ω
3	97V.DC	4.8K Ω	117V.AC	230 Ω
4	100V.DC	4.5K Ω	132V.DC	2.3K Ω
5	0V.	1 MEG.	117V.AC	230 Ω
6	0V.	0 Ω	0V.	0 Ω
7	8V.DC	*	0V.	0 Ω
8	6.7V DC	*	132V DC	2.3K Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 479-23

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. Volume control is shorted during stage gain measurements.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



PACKARD-BELL
MODEL 568

PACKARD-BELL
MODEL 568

PACKARD-BELL MODEL 568

TRADE NAME	Packard-Bell, Model 568
MANUFACTURER	Packard-Bell Co., 3443 Wilshire Blvd., Los Angeles, Calif.
TYPE SET	AC Operated Portable Phono-Radio Combination Superheterodyne with Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE—BROADCAST	540-1740KC RATING .210 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer parallel with base of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.01 MFD	High side to Pin 7 (grid) 12BE6. Low side to B-.	455KC	Tuning cap. closed.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2		Loop	1740KC	Tuning cap. fully open.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3		"	1500KC	Tune for maximum output.	"	A6	"

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

PACKARD-BELL MODEL 568

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PACKARD-BELL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7CC	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PACKARD-BELL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150		PRSA150-30-30	BRD3315	2N513	M-2x30-150	TA-303	Filter - Red
B	30	150							" - Blue
C	30	150		PRS150-30	BR3015	TC47	M-30-150		" - Green
7	25	25		PRS25-25	BR252A	TC26	M-25-25	TA-25	Cath. Bypass
8	.05	400	23009	484-05	DT4S5	TP426	S-4-05	TC-15	Line Bypass
9	.01	600	23006	684-01	DT6S1	TP410	S-6-01	TC-11	Phono Isolation
10	.006	600		684-006	DT6D6	TP409	S-6-006	TC-26	Output Plate Bypass
11	.01	600	23006	684-01	DT6S1	TP410	S-6-01	TC-11	Audio Coupling
12	.006	600		684-006	DT6D6	TP409	S-6-006	TC-26	" "
13	.05	400	23009	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
14	.2	200	23018	484-.2	DT4P2	TP429	S-4-2	TC-2	Line Isolation
15	.002	600		684-002	DT6D2	TP405	S-6-002	TC-22	Tone Compensation *
16	470	500	23916	1468-0005	5W5T5	MC245	MO.5-347	1FM-35	" " " *
17	470	500	23916	1468-0005	5W5T5	MC245	MO.5-347	1FM-35	Audio Plate Bypass
18	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	IF Bypass Diode
19	250	500		1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Osc. Grid Capacitor

*Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACKARD-BELL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
20A	500KΩ	1	25001	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 20A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

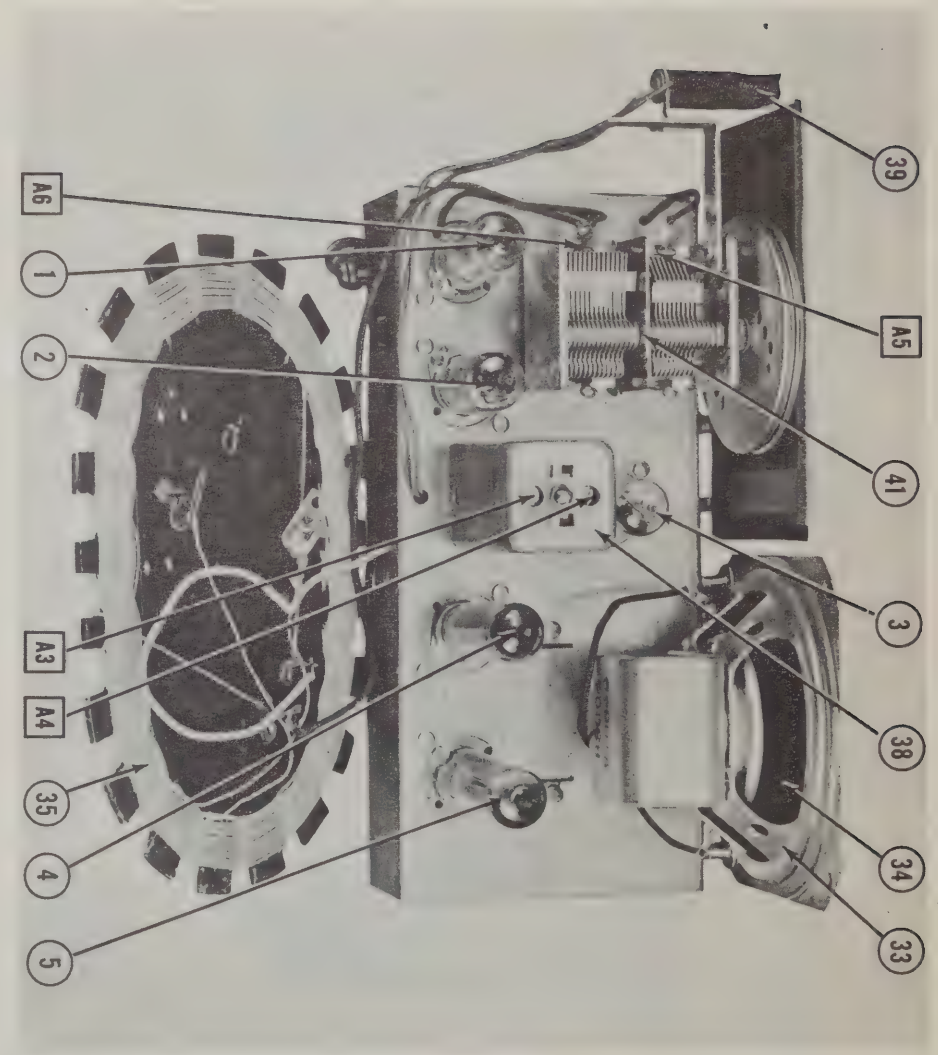
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PACKARD-BELL PART No.	IRC PART No.	IDENTIFICATION CODES
21	22KΩ	½	73041	BTS-22K	Red-Red-Or. Oscillator Grid
22	180Ω	½	73016	BW-½-180	Br.-Gray-Br. IF Cathode
23	2.2 Meg.	½	73055	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
24	4.7 Meg.	½	73057	BTS-4.7 Meg.	Yl.-Vl.-Grn. AF Grid
25	220KΩ	½	73049	BTS-220K	Red-Red-Yl. AF Plate Load
26	470KΩ	½	73051	BTS-470K	Yl.-Vl.-Yl. Output Grid
27	150Ω	1	73081	BW-1-150	Br.-Grn.-Br. Output Cathode
28	4.7 Meg.	½	73057	BTS-4.7 Meg.	Yl.-Vl.-Grn. Series Phono
29	1000Ω	1	73071	BTA-1000	Br.-Blk.-Red Filter
30	180Ω	1	73077	BW-½-180	Br.-Gray-Br. Filter
31	560Ω	½	73022	BTS-560	Grn.-Blue-Br. Pilot Light Shunt

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PACKARD-BELL PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
32	2800Ω	3.8Ω	200Ω	.9Ω	89411	A-3876	T22845		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: PACKARD-BELL PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-113		
33	PM	3.8Ω	83004	Mod. P4-X		
	CONE DIA.	VC DIA.				
34	4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: PACKARD-BELL PART No.	MEISSNER PART No.
35	Loop Ant.	.1Ω	1.8Ω	29320	
36	Osc. Coil	1Ω	6Ω	29203	14-1040
37	Input IF	25Ω	25Ω	29002	
38	Output IF	20Ω	20Ω	29004D	16-6660

DIAL LIGHT

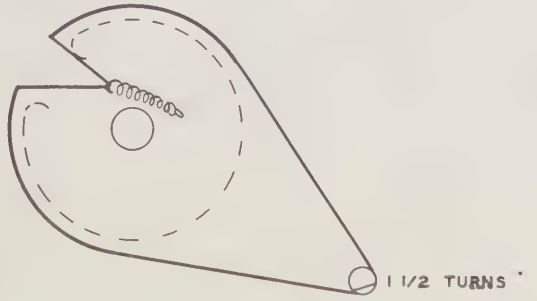
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: PACKARD-BELL PART No.		INSTALLATION NOTES
39	Bayonet	6-8	0.15	Brown	54002		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	PACKARD-BELL PART No.	NOTES
40	Switch	86005B	Radio-Phono
41	2 Gang Var. Cap	29320	16-418 MMF, 22-189 MMF
	Pickup Crystal	63024	
	Dial Pointer	67005	

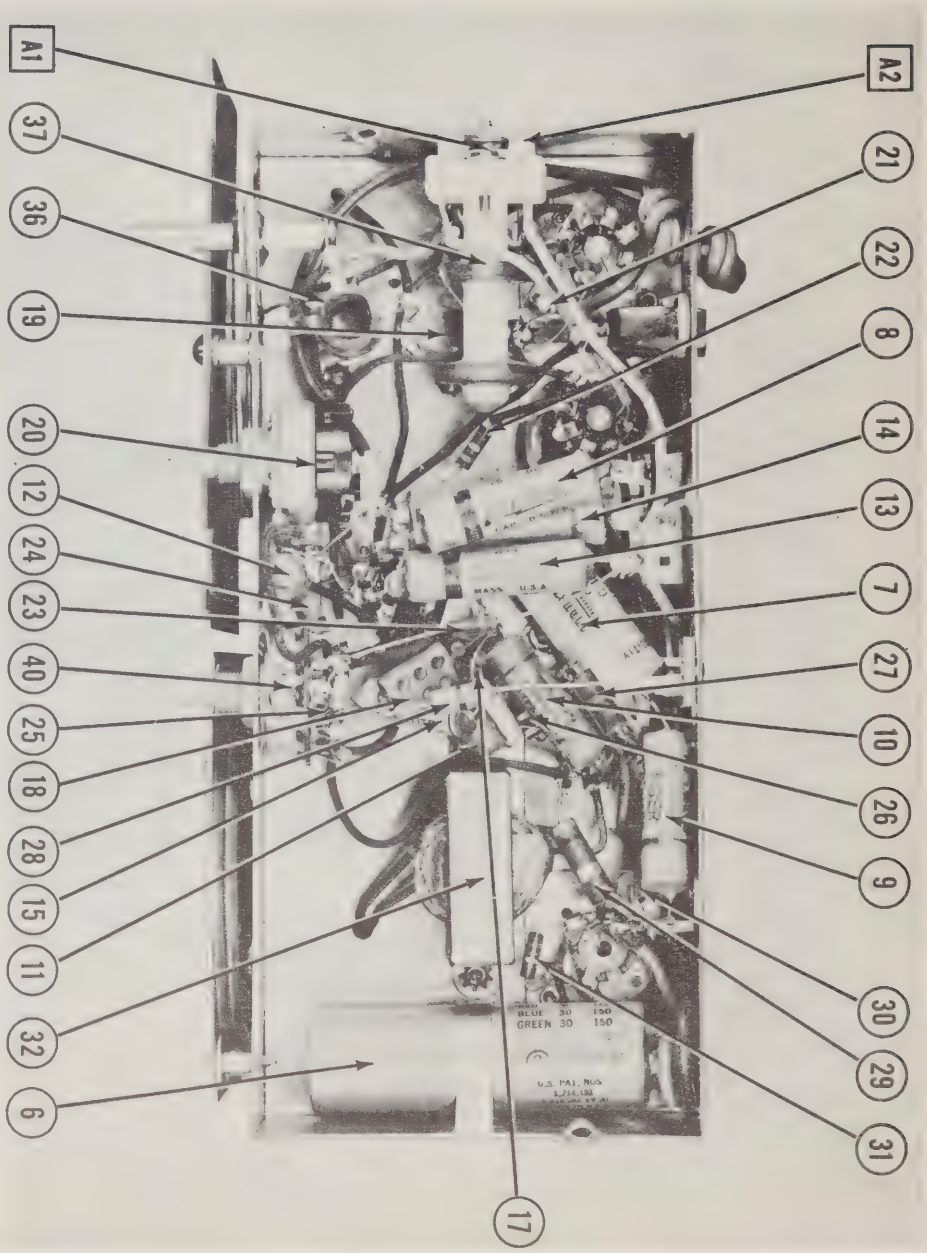
DISASSEMBLY INSTRUCTIONS

1. Remove three push-on type control knobs.
2. Remove five screws holding front panel.
3. Remove four Phillips head screws holding phono board. Lift up and remove phono motor plug and phono-pickup plug from chassis.
4. Remove phono board and phono.
5. Remove two screws holding external antenna clips.
6. Remove staples holding loop antenna.
7. Remove line cord from container.
8. Remove two screws holding chassis. Remove chassis and loop.

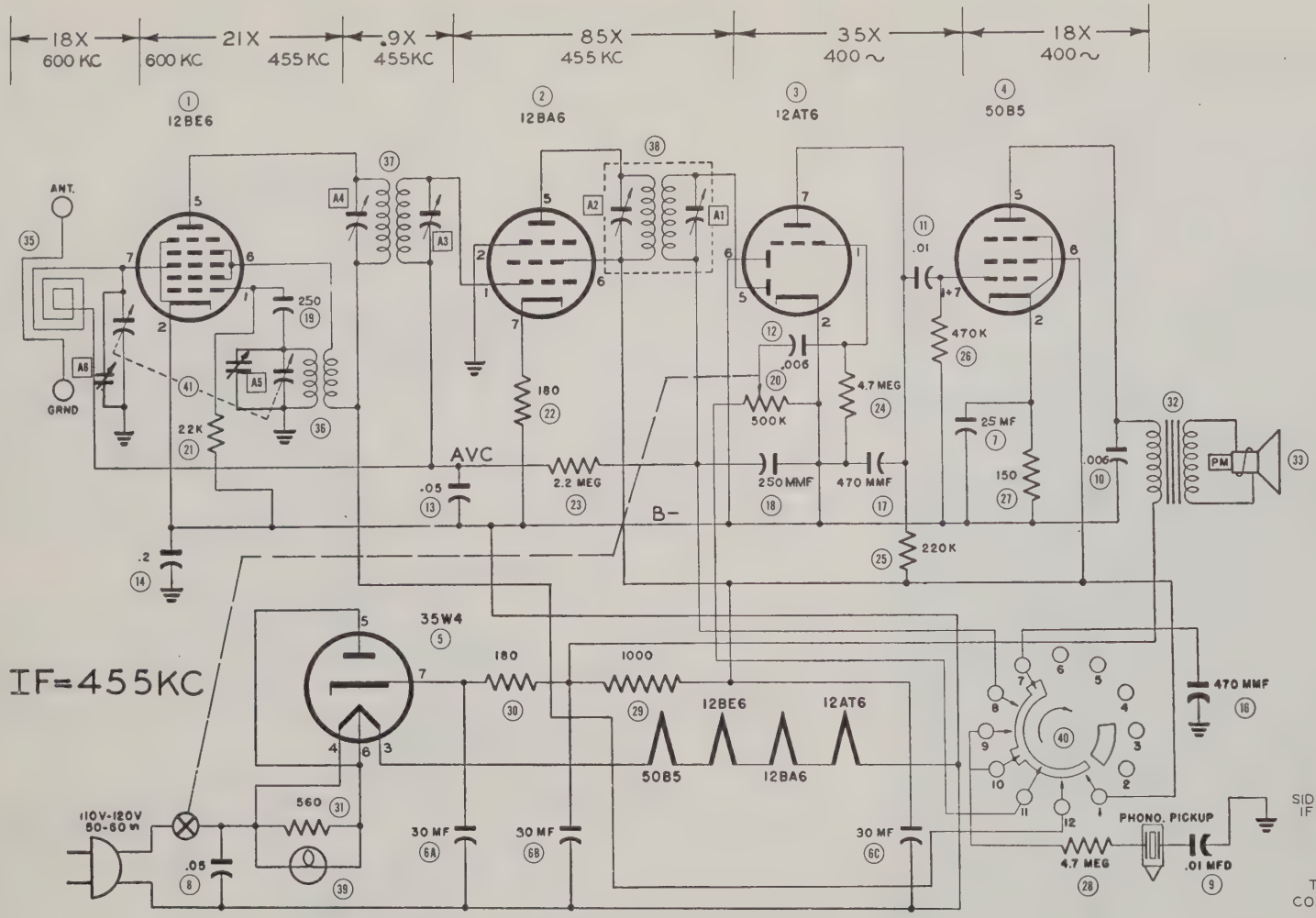


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



PACKARD-BELL MODEL 568

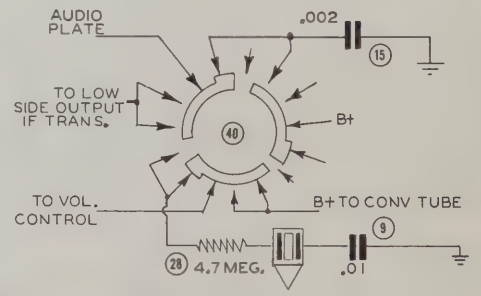


Pin	12BE6		12BA6	
No	Volt	Res	Volt	Res
1	-6.2V.DC	23 K Ω	0V.	2.2MEG.
2	0V.	0 Ω	0V.	0 Ω
3	12V.AC	11 Ω	24V.AC	22 Ω
4	24V.AC	22 Ω	36V.AC	33 Ω
5	85V.DC	50 KΩ	85V.DC	50 KΩ
6	85V.DC	50 KΩ	85V.DC	50 KΩ
7	0V.	2.2MEG	1.45V.DC	160 Ω

Pin	12AT6		50B5	
No	Volt	Res	Volt	Res
1	.5V.DC	4.5MEG.	0V.	480KΩ
2	0V.	0 Ω	5.3V.DC	140 Ω
3	0V.	0 Ω	36V.AC	33 Ω
4	12V.AC	11Ω	88V.AC	75Ω
5	.35V.DC	450KΩ	95V.DC	50 KΩ
6	0V.	0 Ω	87V.DC	50KΩ
7	45V. DC	270 KΩ	0V.	480KΩ

Pin	35W4	
No.	Volt	Res
1	0V.	INF.
2	0V.	INF.
3	88V.AC	75Ω
4	117V.AC	102 Ω
5	114V.AC	100 Ω
6	114V.AC	100 Ω
7	115V.DC	50KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

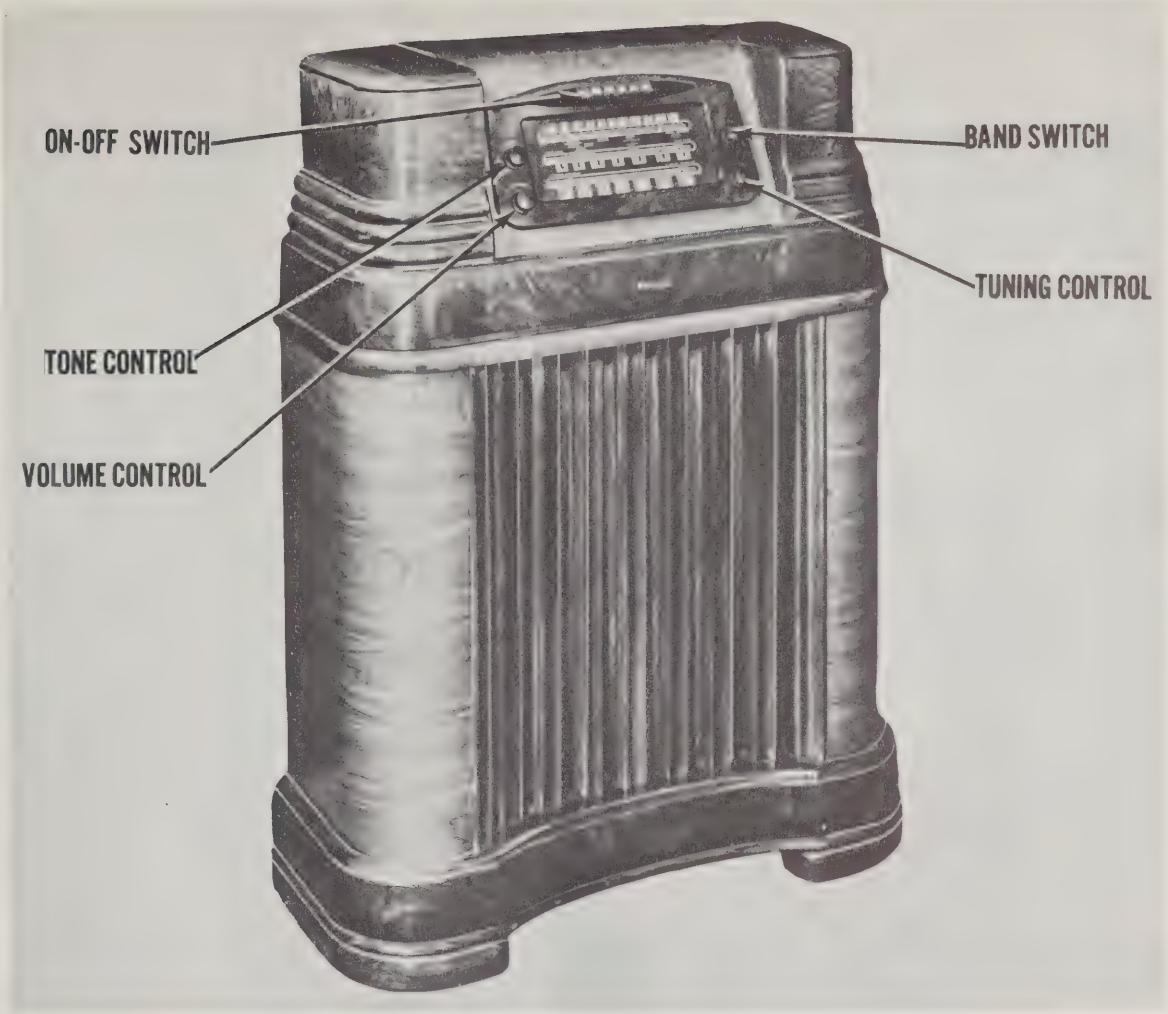


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

ALTERNATE CIRCUIT
479-24

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



PHILCO MODEL 46-480

TRADE NAME	Philco, Model 46-480
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	AC Operated FM-AM Superheterodyne Receiver with Loop Antenna.
TUBES (SEVEN)	Types, 7F8 Converter, 7H7 1st IF Amp., 7H7 2nd IF Amp., 6H6GT Det.-Disc.-AVC, 6SQ7GT AF Amp., 6V6GT Power Output, 7Z4 Rectifier.
POWER SUPPLY	110-120 Volts AC
RATING	.650 Amp. @ 117 Volts AC
TUNING RANGE -	BROADCAST 540-1720KC, SHORT WAVE 9.3-15.5MC, FREQ. MOD. 88-108MC.

PHILCO
MODEL 46-480

HOWARD W. SAMS & CO., INC. Indianapolis 9, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1947 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	7F8	7F8	8BW	
2	1st IF Amp.	7H7	7H7	8V	
3	2nd IF Amp.	7H7	7H7	8V	
4	Det.-Disc.-AVC	6H6GT	6H6GT	7Q	
5	AF Amp.	6SQ7GT	6SQ7GT	8Q	
6	Power Output	6V6GT	6V6GT	7AC	
7	Rectifier	7Z4	7Z4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8	20	450	30-2568-8	AF4J	UP2045	FP144	DY-20-450	EL-2	Filter
9A	25	450	30-2556		UP7DJ54‡		DYx2x30-450	EL-344‡	■ Filter
B	10	450							▲ "
10	5	50	30-2417	PRS150-4	BR550	TC40	M-4-150	TA-55	Disc. Bias
11A	.01	600	3903-0DG	684-01	DT6S1	TP410	S-6-01	TC-11	Line Bypass
B	.01	600		684-01	DT6S1	TP410	S-6-01	TC-11	" " †
12	.5	200		484-.5	DT4P5	TP431	S-4-5	TC-5	Bias Filter
13	.006	400	43-3500-7	484-006	DT6D6	TP409	S-6-006	TC-26	Output Plate Bypass
14	.006	400	43-3500-7	484-006	DT6D6	TP409	S-6-006	TC-26	Audio Coupling
15	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Tone Compensation
16	.006	400	43-3500-7	484-006	DT6D6	TP409	S-6-006	TC-26	" "
17	.006	400	43-3500-7	484-006	DT6D6	TP409	S-6-006	TC-26	Audio Coupling
18	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	" "
19	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Bias Filter
20	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	" "
21	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Tone Compensation
22	.03	400	45-3500-1	484-03	DT4S3	TP424	S-4-03	TC-13	2nd IF Screen Bypass
23	.05	400	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	2nd IF Cath. Bypass
24	.05	400	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	2nd IF Plate Decoup.
25	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	RF Bypass Pwr. Supp.
26	.03	400	45-3500-1	484-03	DT4S3	TP424	S-4-03	TC-13	1st IF Screen Bypass
27	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
28	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	" "
29	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Conv. Plate Decoup.
30	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Filament Bypass
31	100	500	6010105407	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Audio Plate Bypass
32	100	500	6010105407	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Tone Compensation*
33	6.5		30-1224-6						Neutralizing
34	100	500	6010105407	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Diode Filter
35	510	500	6610515307	1468-0005	5W5T5	MC245	M0.5-45	1FM-45	RF Bypass Pwr. Supp.
36	485	500	30-1220-23						Osc. Feedback
37	285	500	30-1220-9						" "
38	255	500	30-1220-24						Fixed Padder
39	100	500	30-1225-2	1468-0001	5W5T1	MC235	M0.5-31	1FM-31	Osc. Grid Capacitor
40	240	500	6010245307	1468-00025	5W5T25	MC240	M0.5-325	1FM-325	Osc. Feedback
41	750	500	6010755301						Cath. Coupling
42	240	500	6010245307	1468-00025	5W5T25	MC240	M0.5-325	1FM-325	RF Coupling
43	10	500	6000105407	1468-00001	5W5Q1	MC215	M0.5-41	1FM-41	Neutralizing
44	255	500	30-1220-24						Fixed Padder
108	240	500		1468-00025	5W5T25	MC240	M0.5-325	1FM-325	Bias Filter *

†May be two .2 MFD. in some models.
*Not used in all models.
‡Parallel sections for desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
45A	2 Meg.	1	33-5535-1	TM259	D18-139X	T-116	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 45A per instructions
46	6 Meg.	1	33-5539-1				Tone Control-See Note

Note-Some models may use a 16 Meg. Control in this application.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
47	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
48	10Ω	½	66-0103340	BW-½-10	Br.-Blk.-Blk. " " -See Note
49	2200Ω	½	66-2223340	BTS-2200	Red-Red-Red Converter Cathode
50	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. Converter Cathode Bias
51	15KΩ	½	66-3153340	BTS-15K	Br.-Grn.-Or. Oscillator Grid
52	10Ω	½	66-0103340	BW-½-10	Br.-Blk.-Blk. Parasitic Suppressor
53	22Ω	½	66-0221550	BW-½-22	Red-Red-Blk. Parasitic Suppressor
54	10KΩ	½	66-3103340	BTS-10K	Br.-Blk.-Or. Oscillator Cathode
55	5600Ω	½	66-2563340	BTS-5600	Grn.-Blue-Red Oscillator Plate Load
56	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. Oscillator Plate Load
57	22Ω	½	66-0221550	BW-½-22	Red-Red-Blk. Parasitic Suppressor
58	4700Ω	½	66-2473340	BTS-4700	Yl.-Vi.-Red Converter Plate Decoupling
59	2.2 Meg.	½	66-5223340	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
60	68Ω	½	66-0683340	BW-½-68	Blue-Gray-Blk. 1st IF Cathode
61	27KΩ	½	66-3273340	BTS-27K	Red-Vi.-Or. 1st IF Screen Dropping
62	3.3 Meg.	½	66-5333340	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
63	1000Ω	½	66-2103340	BTS-1000	Br.-Blk.-Red 2nd IF Plate Decoupling
64	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. 2nd IF Screen Dropping
65	150Ω	½	66-1153340	BW-½-150	Br.-Grn.-Br. 2nd IF Cathode
66	100KΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. AVC Network
67	6.8 Meg.	½	66-5683340	BTS-6.8 Meg.	Blue-Gray-Grn. RF Filter
68	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. Discriminator Bias Network
69	27KΩ	½	66-3273340	BTS-27K	Red-Vi.-Or. Diode Load
70	68KΩ	½	66-3683340	BTS-68K	Blue-Gray-Or. Discriminator Bias Network
71	47KΩ	½	66-3473340	BTS-47K	Yl.-Vi.-Or. Discriminator Bias Network
72	15 Meg.	½	66-6153340	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
73	220KΩ	½	66-4223340	BTS-220K	Red-Red-Yl. AF Plate Load
74	33KΩ	½	66-3333340	BTS-33K	Or.-Or.-Or. Tone Compensation
75	330KΩ	½	66-4333340	BTS-330K	Or.-Or.-Yl. Output Grid
76	8200Ω	1	66-2824340	BTA-8200	Gray-Red-Red Filter
77	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. Bias Network
78	180KΩ	½	66-4183340	BTS-180K	Br.-Gray-Yl. " "

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: PHILCO PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
79A	117V AC @ .65A	650V AC @ .075A	6.5V AC @ 2.9A	6.5V AC @ .3A	32-8243			
B					32-8223			Alternate Trans.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PHILCO PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
80	5000Ω	3.9Ω	470Ω	1Ω	32-8249	A-3877 ♦	T22545 ♦		♦ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: PHILCO PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.				
81	1000Ω	3.9Ω	36-1590			
	CONE DIA.	VC DIA.				
82	11-1/2"	7/8"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO PART No.	REPLACEMENT DATA MEISSNER PART No.	
83	Loop Ant.		.1Ω	76-1989		
84	Di-pole Ant.					
85	BC Ant.Coil		1.5Ω	32-4033-1		
86	SW Ant.Coil		0Ω	32-4050-4		
87	FM Ant.Coil		0Ω	32-4016		
88	FM Conv. Grid Coil		0Ω	32-4017		
89	BC Osc.Coil		3Ω	32-4019-2	14-1040	
90	SW Osc.Coil		0Ω	32-3996-1		
91	FM Osc.Coil		0Ω	32-4018		
92	PB Osc.Coil		3.8Ω	32-4059-2		
93	" " "		3.8Ω	32-4059-2		
94	" " "		3.8Ω	32-4059-2		
95	" " "		2.5Ω	32-3779		
96	" " "		2.5Ω	32-3779		
97	Filament RF Choke		.1Ω	32-4061-1		
98	"		.1Ω	32-4061-1		
99A	AM Input IF	1Ω	20Ω	32-4020		Items 99A & 99B in same can.
B	FM Input IF	1.5Ω	1.5Ω			
100A	AM Inter.IF	4.5Ω**	11Ω††	32-4022		Items 100A & 100B in same can.
B	FM Inter.IF					
101A	AM Output IF	6.5Ω**	11Ω††	32_4074		
B	FM Disc.					Items 101A & 101B in same can.

**Includes both primaries.
††Includes both secondaries.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PHILCO PART No.		INSTALLATION NOTES
102	Bayonet	7.5	0.20	White	34-2040		Type 51
103	"	"	"	"	34-2040		"

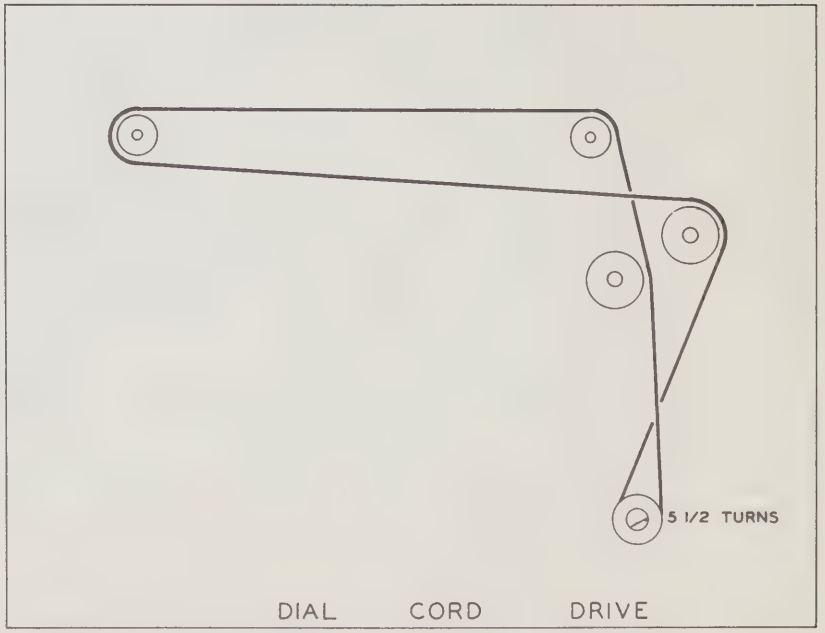
MISCELLANEOUS

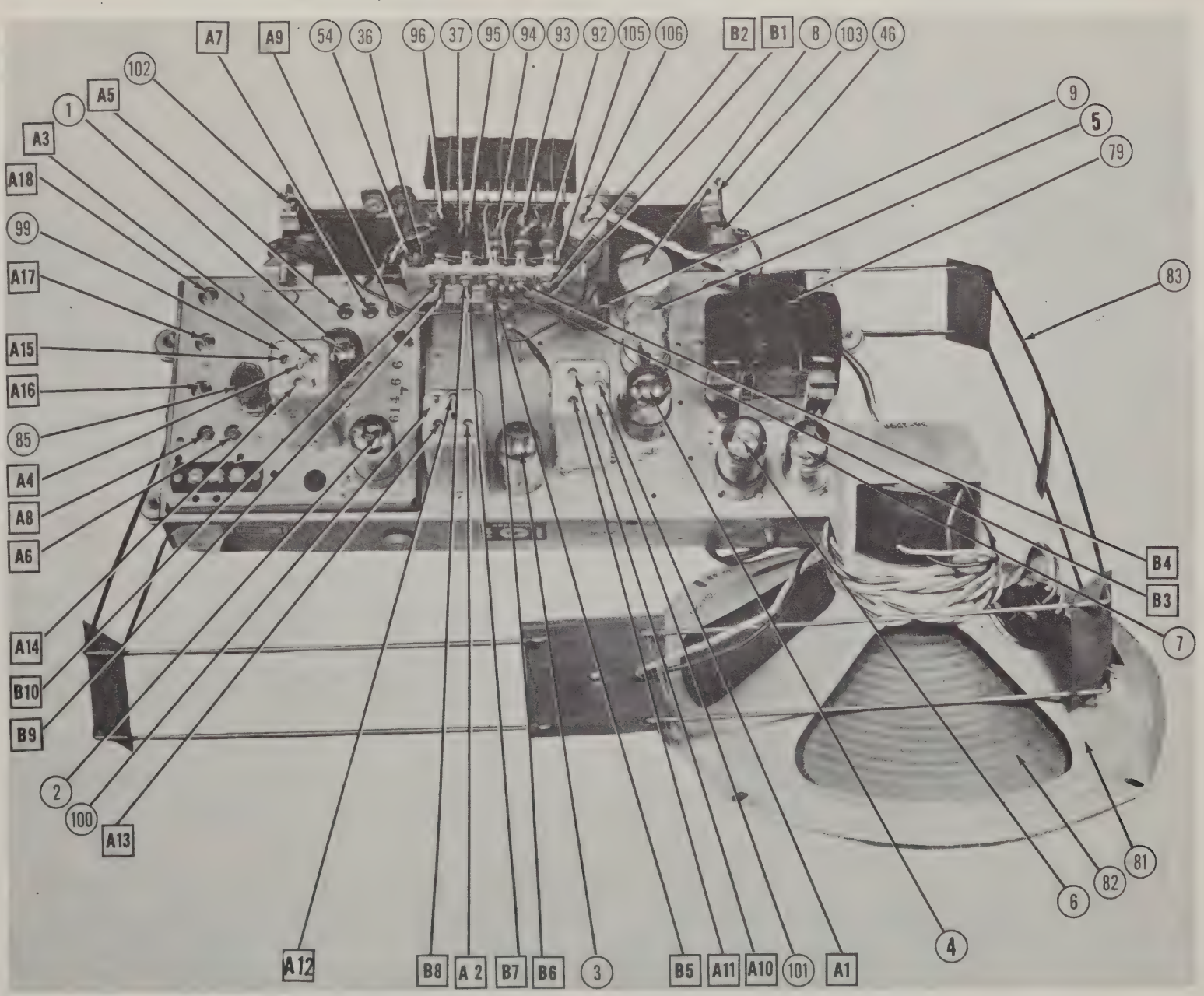
ITEM No.	PART NAME	PHILCO PART No.	NOTES
104	Bandswitch	42-1786-1	
105	Switch		Pushbutton Assembly
106	On-Off Switch	42-1761	
107	Tuning Capacitor	31-2703-2	
A5, A7, A9	Trimmer Strip	31-6464	SW Osc. Adj. / BC Osc. Adj. / BC Osc. Padder
A6, A8	Trimmer Strip	31-6476	SW Ant. Adj. / BC Ant. Adj.
	Pointer	56-3179	
	Dial Scale	76-2226	Plate Included
B2,B4, B6,B8, B10	Trimmer Strip	31-6479-1	Pushbutton Padder Assembly

PUSHBUTTON ADJUSTMENTS

The frequency range of pushbuttons reading from left to right are as follows: 540 - 1000KC, 600 - 1200KC, 650 - 1300KC, 850 - 1500KC, 900 - 1600KC.

1. Turn receiver on and allow it to warm up for at least 15 minutes.
2. List five desired stations arranged in order from low to high frequencies, making sure each will fall within range of button to be used.
3. Turn band switch to pushbutton position (fully counter-clockwise), push in second button from left and adjust B1 to tune in first station on list.
4. Adjust B2 for maximum volume.
5. Follow same procedure for remaining pushbuttons, adjusting B3, B5, B7 and B9 to tune in desired stations and adjust B4, B6, B8 and B10 for maximum volume.
6. For greater accuracy repeat all adjustments.




A7
A9
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106
B2
B1
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46
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1
A3
A18
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A17
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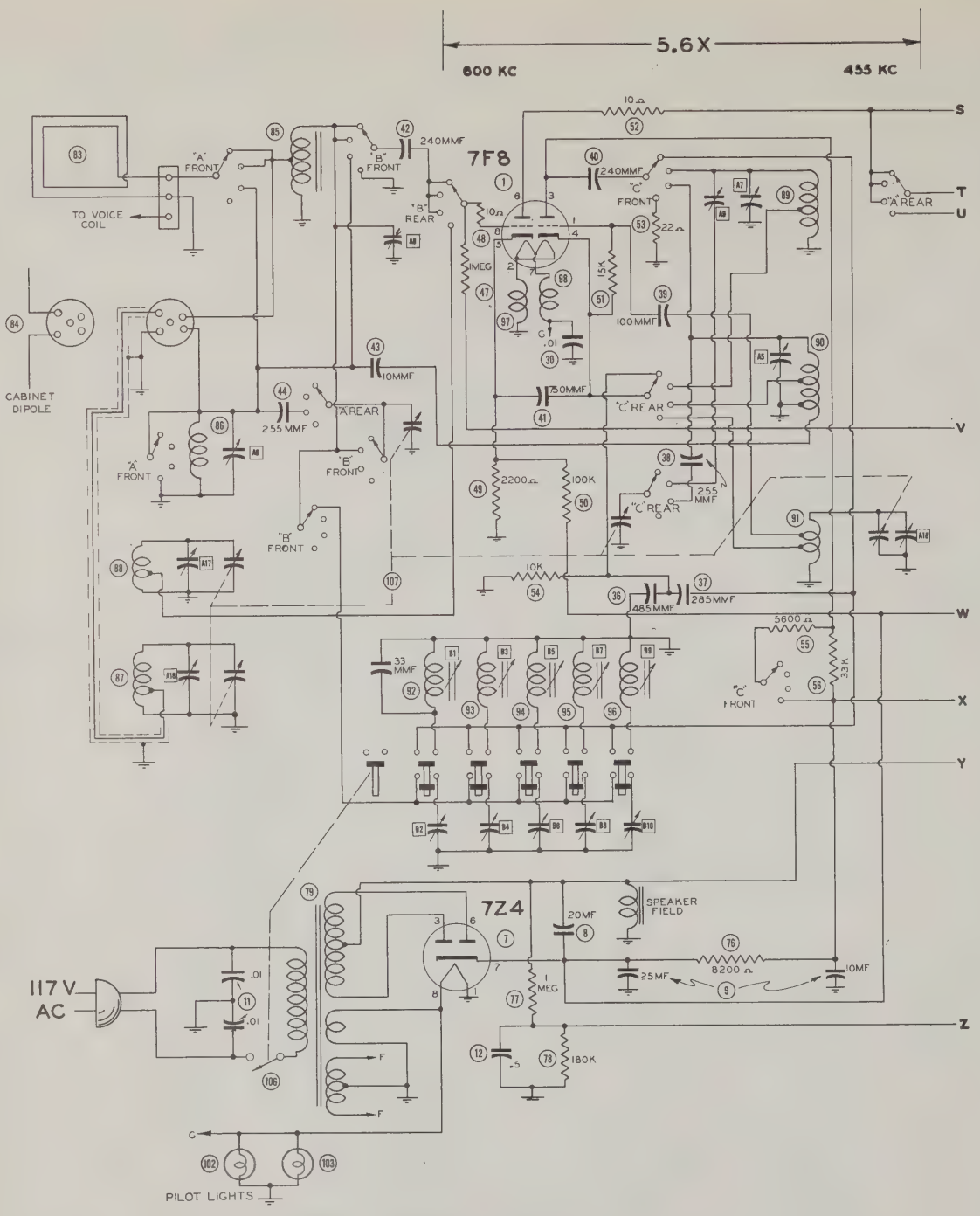
PHILCO
MODEL 46-480 PAGE 5



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION

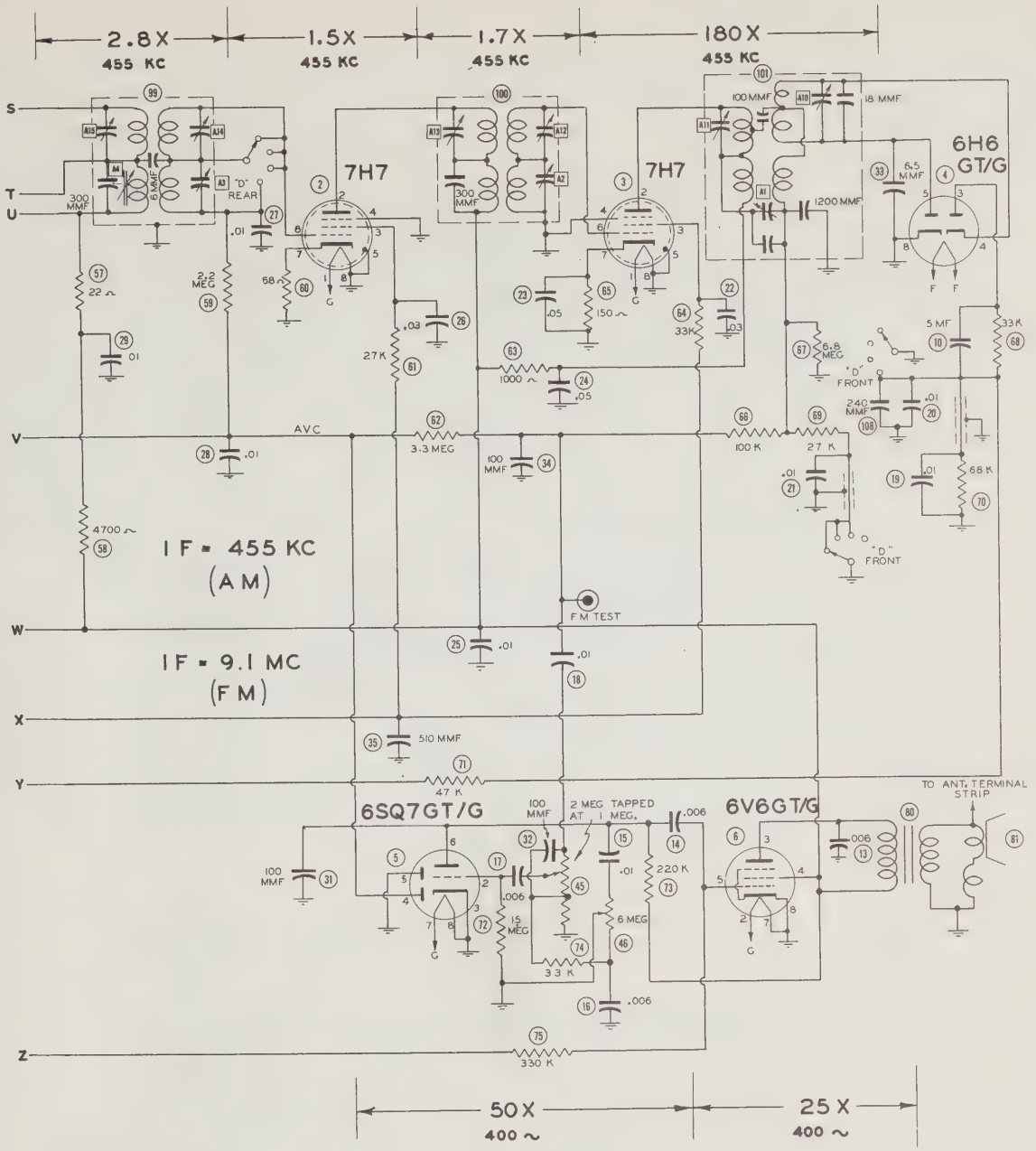
VOLTAGE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7F8	-6V.DC	0V.	90V.DC	0V.	11V.DC	260V.DC	6.5V.AC	-.2V.DC
2	7H7	0V.	280V.DC	120V.DC	0V.	0V.	0V.	.8V.DC	6.5V.AC
3	7H7	0V.	270V.DC	125V.DC	0V.	0V.	0V.	1.6V.DC	6.5V.AC
4	6H6GT/G	0V.	3.3V.AC	-48V.DC	-4V.DC	-4V.DC	-3V.DC	3.3V.AC	0V.
5	6SQ7GT/G	0V.	-.8V.DC	0V.	-3V.DC	0V.	125V.DC	6.5V.AC	0V.
6	6V6GT/G	0V.	6.5V.AC	300V.DC	320V.DC	-4.8V.DC	0V.	0V.	0V.
7	7Z4	0V.	0V.	330V.AC	0V.	455V.AC	330V.AC	320V.DC	6.5V.AC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

479-25

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION

RESISTANCE READINGS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
1	7F8	15 K Ω	0 Ω	120 K Ω	.6 Ω	2000 Ω	85 K Ω	.1 Ω	5 MEG.
2	7H7	0 Ω	80 K Ω	110 K Ω	0 Ω	0 Ω	6 MEG.	60 Ω	.1 Ω
3	7H7	0 Ω	80 K Ω	125 K Ω	0 Ω	0 Ω	10 Ω	130 Ω	.1 Ω
4	6H6GT/G	0 Ω	.3 Ω	55 K Ω	23 K Ω	23 K Ω	140 K Ω	.3 Ω	0 Ω
5	6SQ7GT/G	0 Ω	15 MEG.	0 Ω	3.5 MEG	0 Ω	300 K Ω	.1 Ω	0 Ω
6	6V6GT/G	0 Ω	.1 Ω	80 K Ω	80 K Ω	410 K Ω	140 K Ω	0 Ω	0 Ω
7	7Z4	0 Ω	INF.	850 Ω	.4 Ω	INF.	830 Ω	80 K Ω	.1 Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-25

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

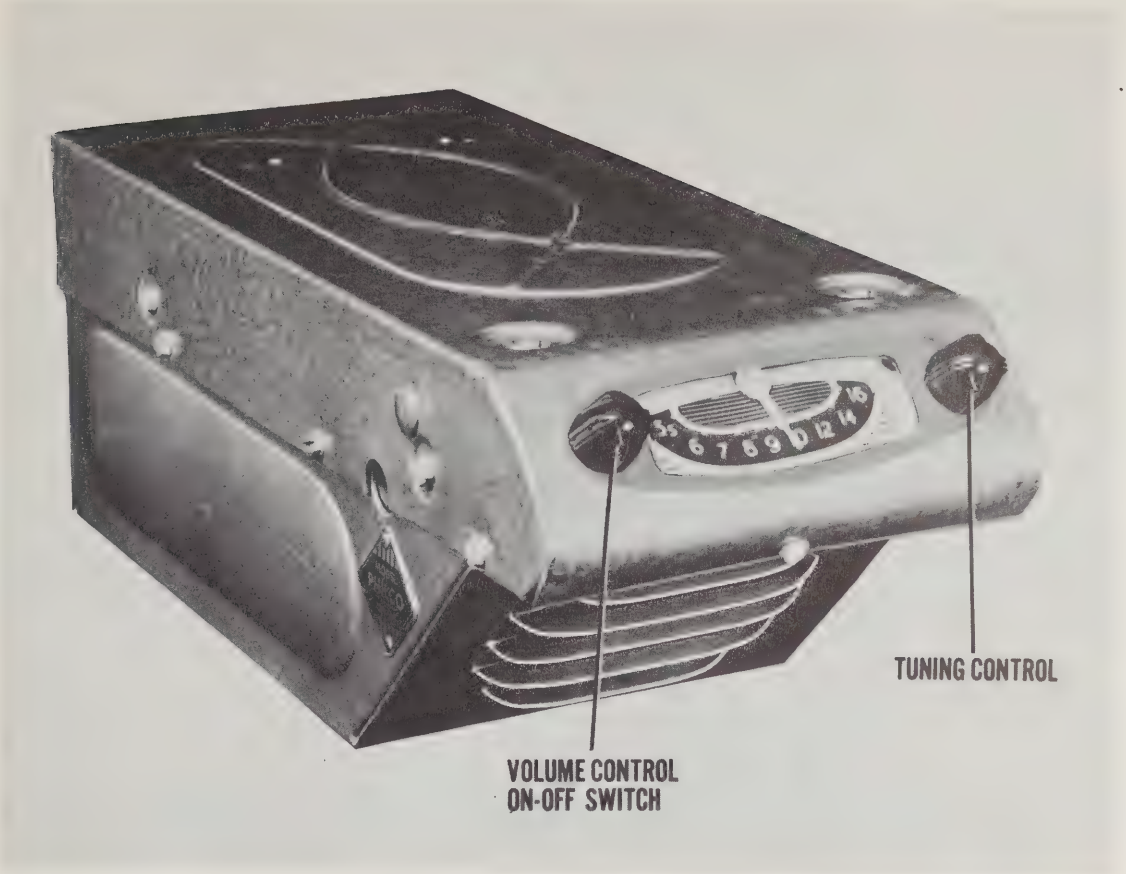
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning capacitor fully closed and set pointer 2-3/16" from left edge of left dial light bracket. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. To check the resonance of the FM coils in Steps 13, 14 and 15 use a tuning wand with a powdered iron slug at one end and a brass slug at the other. If inserting the iron slug in the coil increases the output, compress the turns slightly. If the brass increases the output, spread the turns slightly. When output decreases with the insertion of either end, the coil is at resonance.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to terminal #1 on ant. terminal strip. Low side to chassis.	455KC	BC (Second pos. clockwise)	Tuning cap. fully open.	Across voice coil (Term. 3 of ant. term. strip and chassis)	A1,A2, A3,A4.	Adjust for maximum output in order given.
	Loop	15MC	SW (Third pos. clockwise)	8-3/8" from left edge of left dial light bracket.	"	A5	Fashion loop of several turns of wire and radiate signal into loop. Completely loosen A5. Tighten slowly and adjust for maximum at first peak. Turn signal generator to approx. 15.9MC where image should be heard. If it is not, repeat Step 2.
	"	"	"	Tune for maximum output.	"	A6	Rock tuning control and adjust for maximum output.
	"	1700KC	BC	8-21/32" from left edge of left dial light bracket.	"	A7	Preset A9 by fully tightening, then open 1/4 turn. Adjust A7 for maximum output.
	"	1500KC	"	Tune for maximum output.	"	A8	Adjust for maximum output.
	"	580KC	"	"	"	A9	Rock tuning control and adjust for maximum output. Repeat Steps 4,5,6 until no further increase can be obtained.
.05 MFD.	High side to secondary of 1st IF Trans. (Insert insulated wire to fixed plate of A14.) Low side to chassis.	9.1MC (Unmodulated)	FM (Fully clockwise)	Tuning cap. fully closed.	Connect a 20,000 Ω/v DC meter across capacitor 10.	A10;A11, A12,A13.	Adjust for maximum reading.
.05 MFD.	High side to threaded shank (A4) atop 1st IF Transformer. Low side to chassis.	"	"	"	"	A14,A15	Adjust for maximum reading. Readjust A11, A12 and A13 for maximum reading. Increase input to greater than 20 volt reading while adjusting.
.05 MFD.	"	"	"	"	"	A10	Adjust input for 25-volt meter reading. Carefully turn A10 counter-clockwise recording minimum and maximum readings. Adjust A10 for average of these values. (Example 25 max., 15 min.-Average 20 volts.)
DIRECT	High side to terminal 4 of dipole plug through 70 ohm line. Low side to chassis.	105MC (unmodulated)	"	7½" from left edge of left dial light bracket.	"	A16	Adjust for maximum reading.
DIRECT	"	"	"	Tune for maximum reading.	"	A17	Rock tuning cap. and adjust for maximum reading.
DIRECT	"	"	"	"	"	A18	Adjust for maximum reading.
DIRECT	"	92MC (unmodulated)	"	3-13/16" from left edge of left dial light bracket.	"	FM Osc. Coil (91)	(See pre-alignment instructions)
DIRECT	"	"	"	Tune for maximum reading.	"	FM Conv. Coil (88)	"
DIRECT	"	"	"	"	"	FM Ant. Coil (87)	"

Repeat Steps 10 thru 15 until no further improvement can be made.

PHILCO
MODEL UN 6-100



PHILCO
MODEL UN 6-100

PHILCO MODEL UN6-100

TRADE NAME	Philco, Model UN6-100
MANUFACTURER	Philco Corp., Tioga & "C" Sts., Philadelphia, Pa.
TYPE SET	Battery Operated Universal Automotive Superheterodyne Receiver
TUBES (SIX)	Types, 7A7 RF Amp., 7B8 Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, 7A5 Power Output, 7Y4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	650-1580KC . RATING 4.4 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to index dot at low frequency end of dial. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. After receiver has been installed in car adjust A5 on a weak station near 1400KC.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.05 MFD.	High side to ant. receptacle. Low side to chassis.	455KC	540KC	Across voice coil	A1,A2, A3	Short Pin 4 of 7B8 to chassis. Adjust for maximum output in the order given. Repeat adjustments and remove short on Pin 4 of 7B8.
2	Connect a 30MMFD cap. from ant. recept. to chassis.	High side through 30 MMFD to ant. recept. Low side to chassis.	1600KC	1600KC	"	A4	Adjust for maximum output.
3	"	"	1400KC	Tune for maximum output.	"	A5	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7B8	7B8	8X	
3	IF Amp.	7A7	7A7	8V	
4	Det.-AVC-AF	7B6	7B6	8W	
5	Power Output	7A5	7A5	6AA	
6	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	10	200	61-0068	AF43F4A	UP4CJ3	FP316	DY-310	EL-331	■ Filter
B	10	150							▲ "
C	20	25							Cath. Bypass
8	.5	100	61-0137	484-.5	DT4P5	TP431	S-4-5	TC-5	Hash Filter
9	.5	100	61-0137	484-.5	DT4P5	TP431	S-4-5	TC-5	" "
10	.015	1000	61-0138	1084-015	TVC10S15	0T375	TM-16-015	TR-02	Buffer
11	.03	600	61-0119	684-03	DT6S3	TP413	S-6-03	TC-13	Output Plate Bypass
12	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
13	.004	600	30-4623	684-004	DT6S4	TP407	S-6-004	TC-24	" "
14	.05	200	30-4518	484-05	DT4S5	TP426	S-4-05	TC-15	IF Cath. Bypass
15	.05	200	30-4518	484-05	DT4S5	TP426	S-4-05	TC-15	RF Bypass Pwr. Supp.
16	.05	200	30-4518	484-05	DT4S5	TP426	S-4-05	TC-15	Cath. Bypass
17	.05	200	30-4518	484-05	DT4S5	TP426	S-4-05	TC-15	Screen Bypass
18	.05	200	30-4518	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
19	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Ext. Ant. Coupling
20	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Hash Filter
21	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	" "
22	8	500	6000105407						Fixed Trimmer
23	100	500	6010105407	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Osc. Grid Capacitor
24	100	500	6010105407	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	350KΩ	1	67-0020		D13-132		Volume Control
B	Shaft		Not Req.		N		Attach to 25A per instructions
C	Switch		" "		41		" " " " "

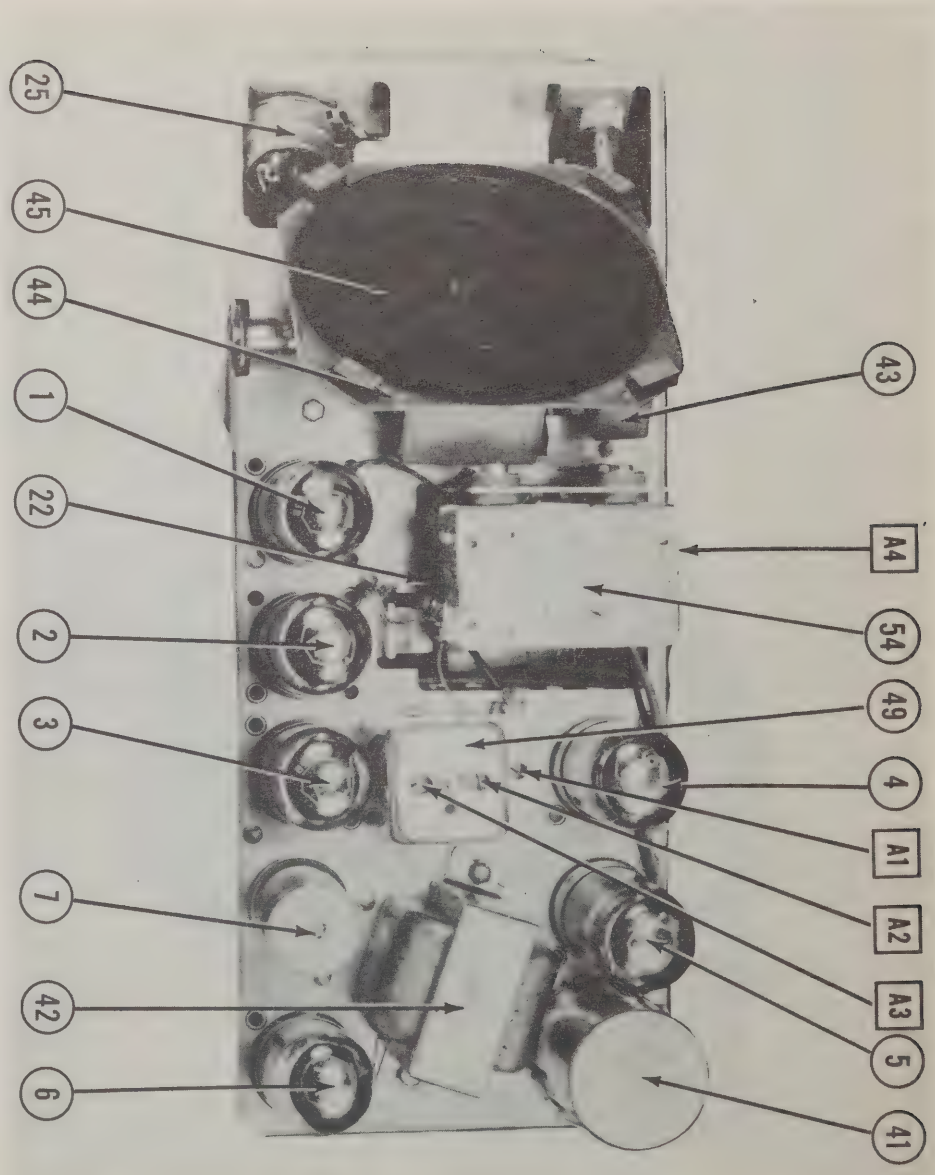
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
26	10KΩ	± ½	66-3103340	BTS-10K	Br.-Blk.-Or. RF Plate Load
27	22KΩ	± ½	66-3223340	BTS-22K	Red-Red-Or. Converter Grid
28	200Ω	± ½	66-1203260	BW-½-220	Red-Blk.-Br. RF Converter Cathode
29	100KΩ	± ½	66-4103340	BTS-100K	Br.-Blk.-Yl. Oscillator Grid
30	200Ω	± ½	66-1203260	BW-½-200	Red-Blk.-Br. IF Cathode
31	15 Meg.	± ½	66-6154340	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
32	220KΩ	± ½	66-4223340	BTS-220K	Red-Red-Yl. AF Plate Load
33	2.2 Meg.	± ½	66-5224340	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
34	470KΩ	± ½	66-4473340	BTS-470K	Yl.-Vi.-Yl. Output Grid
35	200Ω	± ½	66-1203360	BW-½-180	Red-Blk.-Br. Output Cathode
36	2200Ω	± ½	66-2223340	BTS-2200	Red-Red-Red Decoupling
37	15KΩ	± ½	66-3153340	BTS-15K	Br.-Grn.-Or. Screen Dropping
38	2700Ω	1	66-2274340	BTA-2700	Red-Vi.-Red Filter
39	220Ω	± ½	66-1224340	BW-½-220	Red-Red-Br. Hash Suppression
40	220Ω	± ½	66-1224340	BW-½-220	Red-Red-Br. Hash Suppression

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA: PHILCO PART No.	MALLORY PART No.	RADIART PART No.	INSTALLATION NOTES
41A	Interrupter	6.3	115 ∿	83-0025	859	5326P	
B				83-0026	859	5326P	Alternate Vibrator

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER VIBRATOR

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PHILCO PART No.	STANCOR PART No.	THORDARSON PART No.	
42	6.0V DC @ 1.8A	300V CT @ .038A			65-0404	P-8301		

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PHILCO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
43	2600Ω	3.3Ω	200Ω	.6Ω	Part of 73-0027	A-3876	T22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			PHILCO PART No.	JENSEN PART No.		
44	FIELD PM	VC IMP. 3.3Ω	73-0027	ST-113* Mod. P4-X		*Fabricate new mounting bracket.
45	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	PHILCO PART No.	MEISSNER PART No.	
46	Ant. Choke Coil		.5Ω	65-0168		
47	Ant. Coil		2.5Ω	65-0196		
48	Osc. Coil	3Ω	5.5Ω	65-0194	14-1040	
49	Input IF	19Ω	19Ω	65-0191	16-6658	
50	Output IF	53Ω	7Ω	65-0192		
51	Vibrator Choke		0Ω	65-0204		
52	A. Choke		0Ω	32-2477		

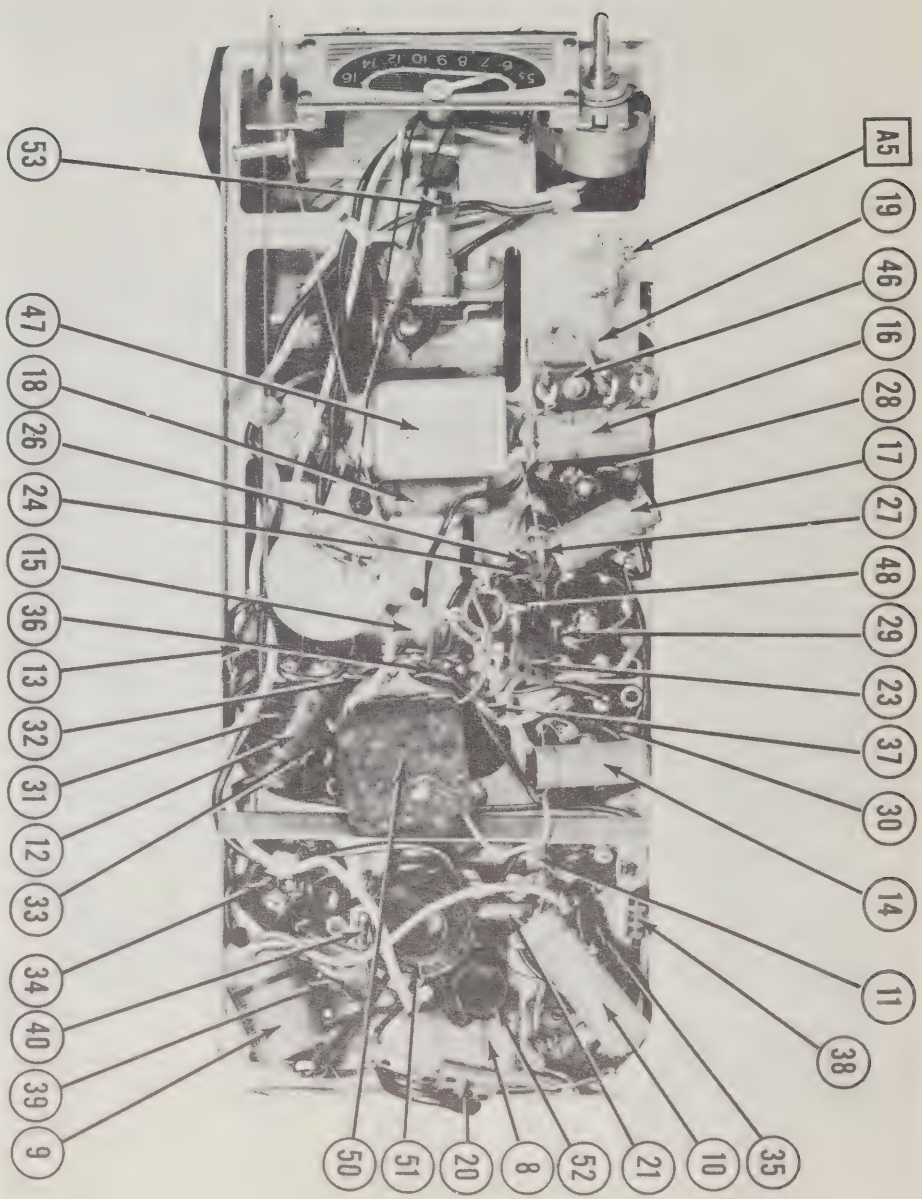
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					PHILCO PART No.		
53	Bayonet	6-8	0.40	White	34-2039		Type 422

MISCELLANEOUS

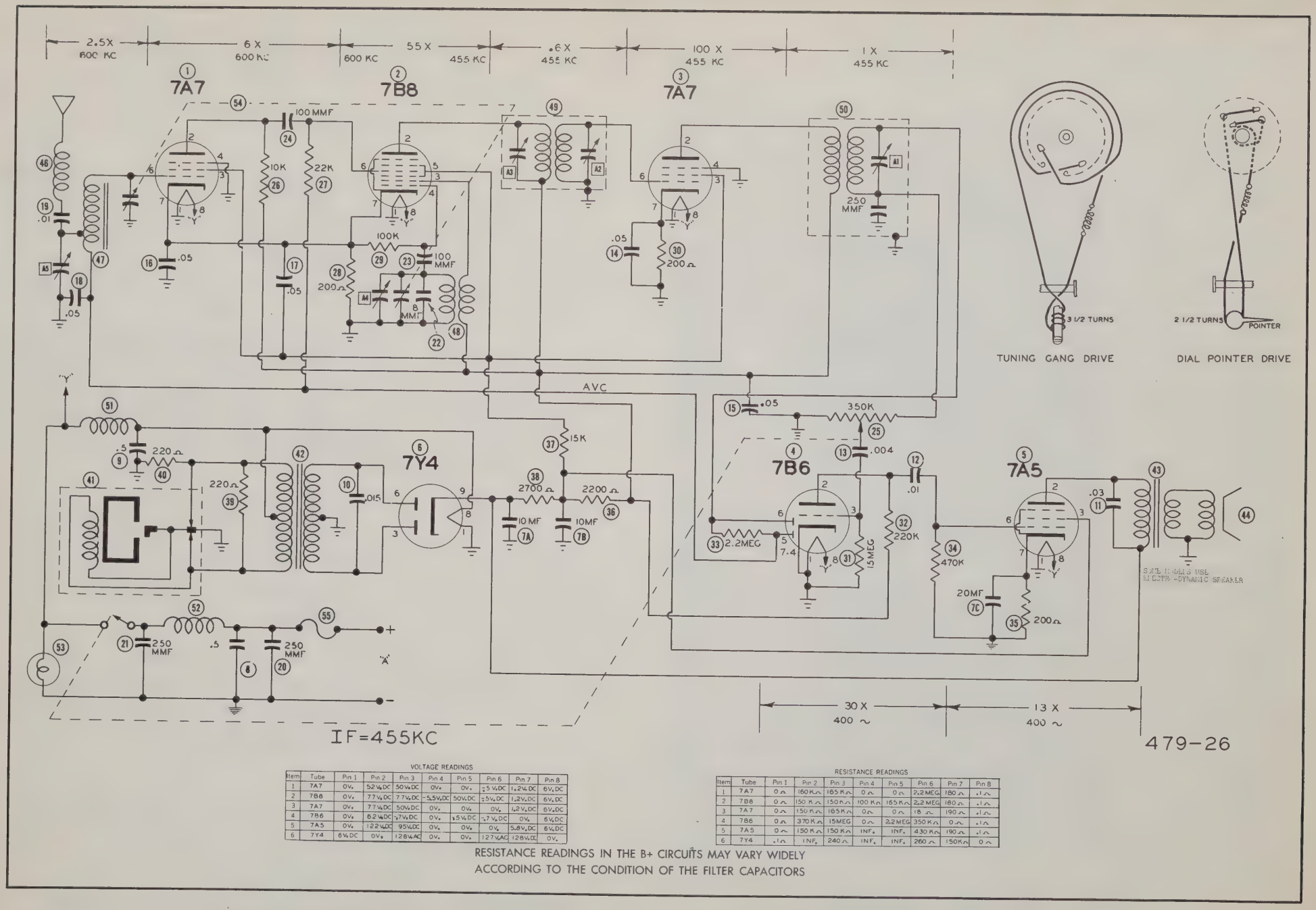
ITEM No.	PART NAME	PHILCO PART No.	NOTES
54	2 Gang Var. Cap	63-0028	13-420 MMF, 27-202 MMF
55	Fuse	45-2559	AGC15
A5	Trimmer Cap.	63-0030	Antenna Adjustment
	Dial Glass	55-0501	
	Dial Scale	55-1200	
	Pointer	57-1940FCP	

CHASSIS—BOTTOM VIEW



PHILCO MODEL UN6-100

PHILCO MODEL UN6-100



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0V.	52V.DC	50V.DC	0V.	0V.	±5V.DC	1.2V.DC	6V.DC
2	7B8	0V.	77V.DC	77V.DC	-5.5V.DC	50V.DC	±5V.DC	1.2V.DC	6V.DC
3	7A7	0V.	77V.DC	50V.DC	0V.	0V.	0V.	1.2V.DC	6V.DC
4	7B6	0V.	82V.DC	-7V.DC	0V.	±5V.DC	-7V.DC	0V.	6V.DC
5	7A5	0V.	122V.DC	95V.DC	0V.	0V.	0V.	5.8V.DC	6V.DC
6	7Y4	6V.DC	0V.	128V.AC	0V.	0V.	127V.AC	128V.DC	0V.

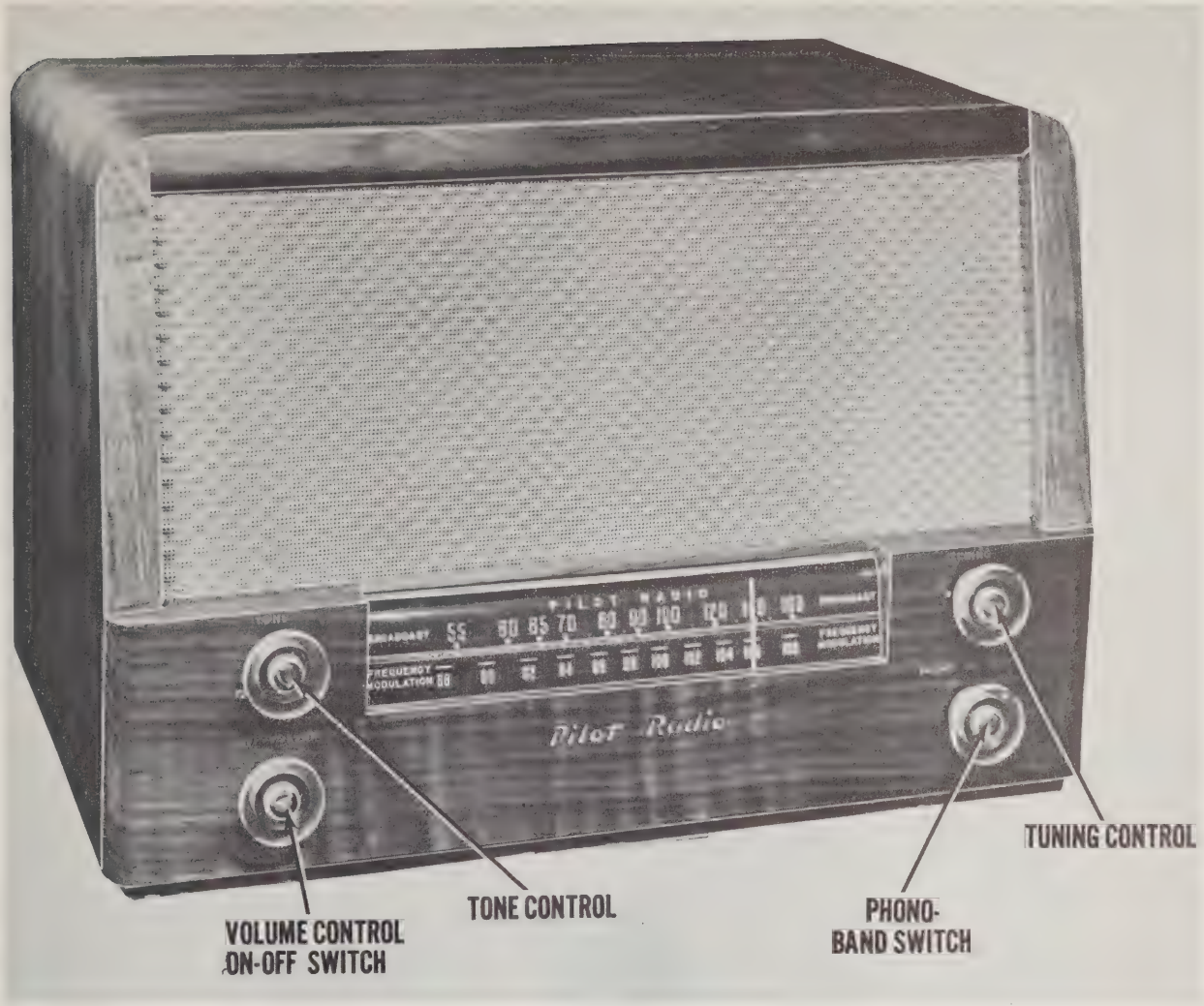
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0Ω	160KΩ	165KΩ	0Ω	0Ω	2.2MEG	180Ω	.1Ω
2	7B8	0Ω	150KΩ	150KΩ	100KΩ	165KΩ	2.2MEG	180Ω	.1Ω
3	7A7	0Ω	150KΩ	165KΩ	0Ω	0Ω	18Ω	190Ω	.1Ω
4	7B6	0Ω	370KΩ	15MEG	0Ω	2.2MEG	350KΩ	0Ω	.1Ω
5	7A5	0Ω	150KΩ	150KΩ	INF.	INF.	430KΩ	190Ω	.1Ω
6	7Y4	.1Ω	INF.	240Ω	INF.	INF.	260Ω	150KΩ	0Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY
ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be born in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by connecting negative (-) 3 volts to the AVC line.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



PILOT MODEL T-521

PILOT MODEL T-521	
TRADE NAME	Pilot, Model T-521
MANUFACTURER	Pilot Radio Corp., 37-06 36th St., Long Island City, N.Y.
TYPE SET	AC-DC Operated FM-AM Superheterodyne with Loop Antenna & Phonograph Provisions
TUBE (EIGHT)	Types, 6AG5 FM RF Amp., 6SB7Y FM-AM Converter, 6SG7 1st IF Amp., 6SG7 FM Driver-AM 2nd IF, 6H6 Ratio Detector, 6SJ7 AF Amp., 25L6GT Power Output, 25Z6GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
RATING	.460 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	535-1620KC FM 88-108MC

PILOT MODEL T-521 PAGE 1

HOWARD W. SAMS & CO., INC. Indianapolis . Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	6AG5	6AG5	7BD	
2	FM-AM Converter	6SB7Y	6SB7Y	8R	
3	1st IF Amp.	6SG7	6SG7	8BK	
4	FM Driver-AM 2nd IF Amp.	6SG7	6SG7	8BK	
5	Ratio Detector	6H6	6H6	7Q	
6	AF Amp.	6SJ7	6SJ7	8N	
7	Power Output	25L6GT	25L6GT	7AC	
8	Rectifier	25Z6GT	25Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PILOT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	50	150	24-69		UP6CJ44†		DY-8040-150	EL-26	▲ Filter
B	120	150			BR4015		M-50-150	UT-501	■ "
10	25	25	24-64	PRS25-25	BR252A	TC26	M-25-25	TA-25	Cath. Bypass
11	25	25	24-64	PRS25-25	BR252A	TC26	M-25-25	TA-25	" "
12	24	150		PRS150-24	BR2015	TC45	M-24-150	UT-201	Filter
13	.001	600	22-63	684-001	DT6D1	TP404	S-6-001	TC-21	Rect. Bypass
14	.05	600	22-31	684-05	DT6S5	TP415	S-6-05	TC-15	Line Filter
15	.1	600	22-37	684-.1	DT6P1	TP418	S-6-1	TC-1	Tone Compensation
16	.01	600	22-18	684-01	DT6S1	TP410	S-6-01	TC-11	Output Plate Bypass
17	.01	600	22-18	684-01	DT6S1	TP410	S-6-01	TC-11	Audio Coupling
18	.1	200	22-33	484-.1	DT4P1	TP428	S-4-1	TC-1	Audio Screen Bypass
19	.1	600	22-37	684-.1	DT6P1	TP418	S-6-1	TC-1	Phono Isolation
20	.01	600	22-18	684-01	DT6S1	TP410	S-6-01	TC-11	Audio Coupling
21	.001	600	22-54	684-001	DT6D1	TP404	S-6-001	TC-21	De-emphasis
22	.1	400	22-36	484-.1	DT4P1	TP428	S-4-1	TC-1	Line Isolation
23	.5	200	22-43	484-.5	DT4P5	TP431	S-4-5	TC-5	Ratio Det. Bias
24	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	RF Bypass Pwr. Supp.
25	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	" " " "
26	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	" " " "
27	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	Line Isolation
28	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	IF Plate Decoupling
29	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
30	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	Line Isolation
31	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
32	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	Line Isolation
33	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	IF Screen Bypass
34	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	RF Bypass Pwr. Supp.
35	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	" " " "
36	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	Conv. Screen Bypass
37	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	Line Isolation
38	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	" "
39	.01	400	22-17	484-01	DT4S1	TP421	S-4-01	TC-11	RF Bypass Pwr. Supp.
40	.003	600	22-102	684-003	DT6D3	TP406	S-6-003	TC-23	Ant. Coupling
41	600	500	29-11		1W5T6		MO.5-36	MS-36	Filament Bypass Cer.
42	600	500	29-11		1W5T6		MO.5-36	MS-36	" " " "
43	600	500	29-11		1W5T6		MO.5-36	MS-36	Filament Bypass
44	600	500	29-11		1W5T6		MO.5-36	MS-36	" "
45	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Conv. Cath. Bypass
46	600	500	29-11		1W5T6		MO.5-36	MS-36	Filament Bypass
47	600	500	29-11		1W5T6		MO.5-36	MS-36	" "
48	600	500	29-11		1W5T6		MO.5-36	MS-36	FM Ant. Coupling
49	600	500	29-11		1W5T6		MO.5-36	MS-36	Line Isolation
50	600	500	29-11		1W5T6		MO.5-36	MS-36	" "
51	1500	500	29-10	1467-0015	1W5D15	MC456	MW.5-215	1FM-215	" "
52	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Ratio Det. Load
53	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	" " "
54	600	500	29-14		1W5T6		MO.5-36	MS-36	Ratio Det. Filter
55	600	500	29-11		1W5T6		MO.5-36	MS-36	Line Isolation
56	600	500	29-11		1W5T6		MO.5-36	MS-36	IF Plate Decoupling
57	600	500	29-11		1W5T6		MO.5-36	MS-36	Line Isolation

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
94	2400Ω	3.8Ω	200Ω	.5Ω	Part of 41-20	A-3876	T22S45		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
	FIELD	VC IMP.				
95	PM	3.8Ω	41-20			
	CONE DIA.	VC DIA.				
96	7-7/8"	1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA: MEISSNER PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
97	Loop Ant.		1.2Ω	74-15			
98	BC Ant.Coil	29Ω	3Ω	70-57	14-1026		
99	FM Ant.Coil		0Ω	70-56			
100	FM RF Coil	0Ω		71-21			
101	FM RF Coil		0Ω	71-22			
102	BC Osc.Coil		2.7Ω	272-29			
103	RF Choke		0Ω				
104	RF Choke		.1Ω	75-13			
105	RF Choke		.1Ω	75-14			
106	RF Choke		.1Ω	75-14			
107	AC Line Choke		.1Ω	79-60			
108A	AM Input IF	1.5Ω§		273-106			Items 108A & 108B in same can.
B	FM Input IF						
109A	AM Inter. IF	1.5Ω§		273-75			Items 109A & 109B in same can.
B	FM Inter.IF						
110	AM Output IF	8Ω		279-25			
111	Ratio Det.	.5Ω	.2Ω	279-28			

§Includes both primaries.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: PILOT PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
112	Bayonet	6.3	0.15	Brown			Type 47
113	"	"	"	"			"
114	"	"	"	"			

MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
115	Switch		Phono-Band
116	"		Antenna Selector
117	XTAL Detector	110-304	Germanium-Sylvania Type 1N34
118	Tuning Capacitor	226-40	(AM Sections 15-408 MMF (FM 15-33MMF)

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	PILOT PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
58	600	500	29-11		1W5T6		MO.5-36	MS-36	IF Screen Bypass
59	600	500	29-11		1W5T6		MO.5-36	MS-36	AVC Filter
60	600	500	29-11		1W5T6		MO.5-36	MS-36	Conv. Screen Bypass
61	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Conv. Plate Bypass
62	600	500	29-11		1W5T6		MO.5-36	MS-36	RF Bypass Pwr. Supp.
63	600	500	29-11		1W5T6		MO.5-36	MS-36	Line Isolation
64	600	500	29-11		1W5T6		MO.5-36	MS-36	AVC Filter
65	1500	500	29-10	1467-0015	1W5D15	MC456	MW.5-215	1FM-215	RF Screen Bypass
66	1500	500	29-10	1467-0015	1W5D15	MC456	MW.5-215	1FM-215	Line Isolation
67	1500	500	29-10	1467-0015	1W5D15	MC456	MW.5-215	1FM-215	RF Bypass Pwr. Supp.
68	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	RF Coupling
69	250	500	20-22	1468-00025	5W5T25	MC456	MO.5-325	1FM-325	Fixed Padder
70	1500	500	29-10	1467-0015	1W5D15	MC456	MW.5-215	1FM-215	AVC Filter
71	50	500	29-14	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
72	600	500	29-11		1W5T6		MO.5-36	MS-36	Osc. Feedback

†Parallel sections for desired capacity.

CONTROLS

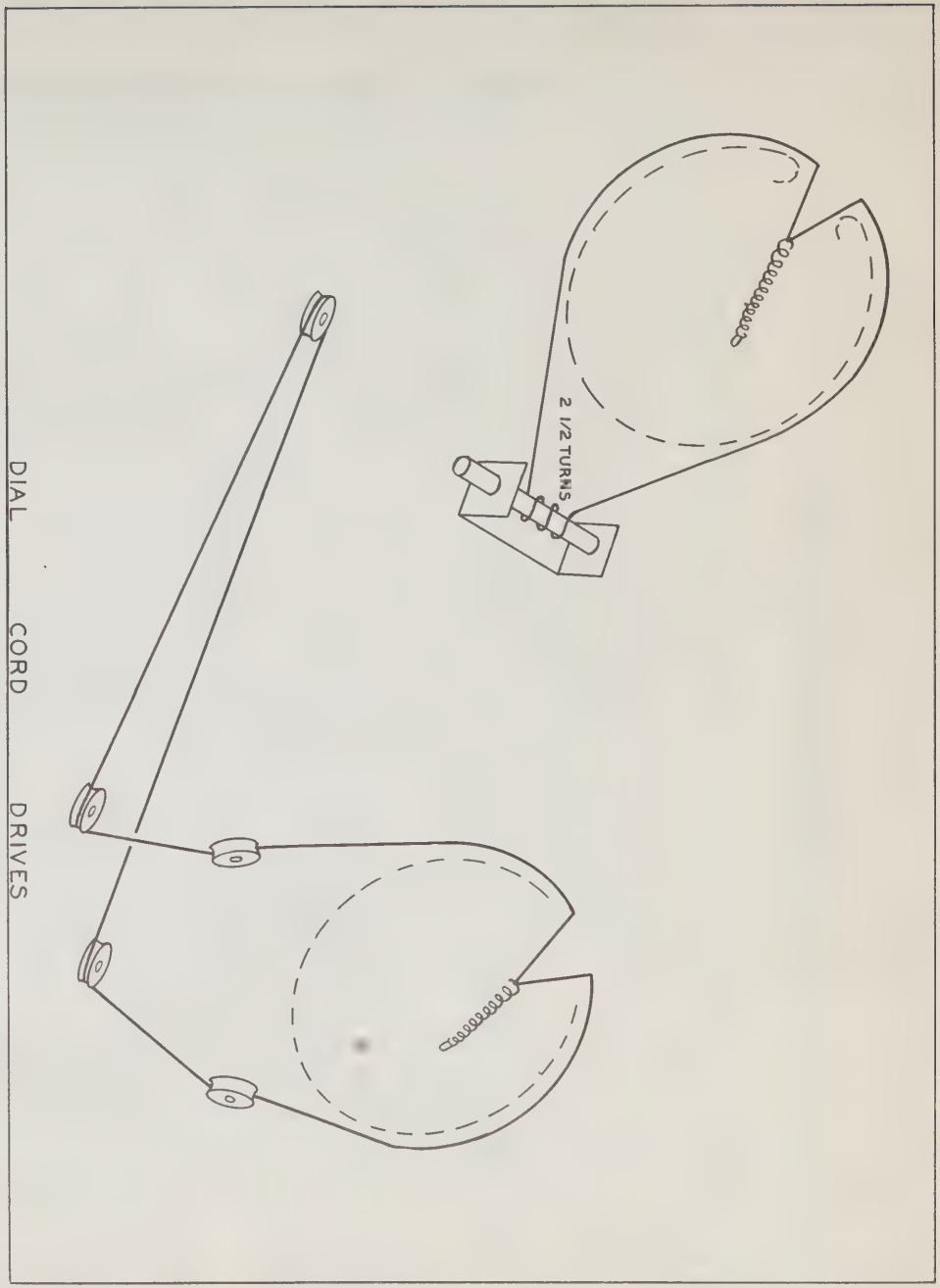
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	PILOT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
73A	1 Meg.	1	36-26	MR53	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	RS-3	Attach to 73A per instructions
C	Switch		" "	M26	41	SW-A	" " " "
74A	10KΩ	1	37-16	MR18	D13-116	AM-81-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	RS-3	Attach to 74A per instructions

RESISTORS

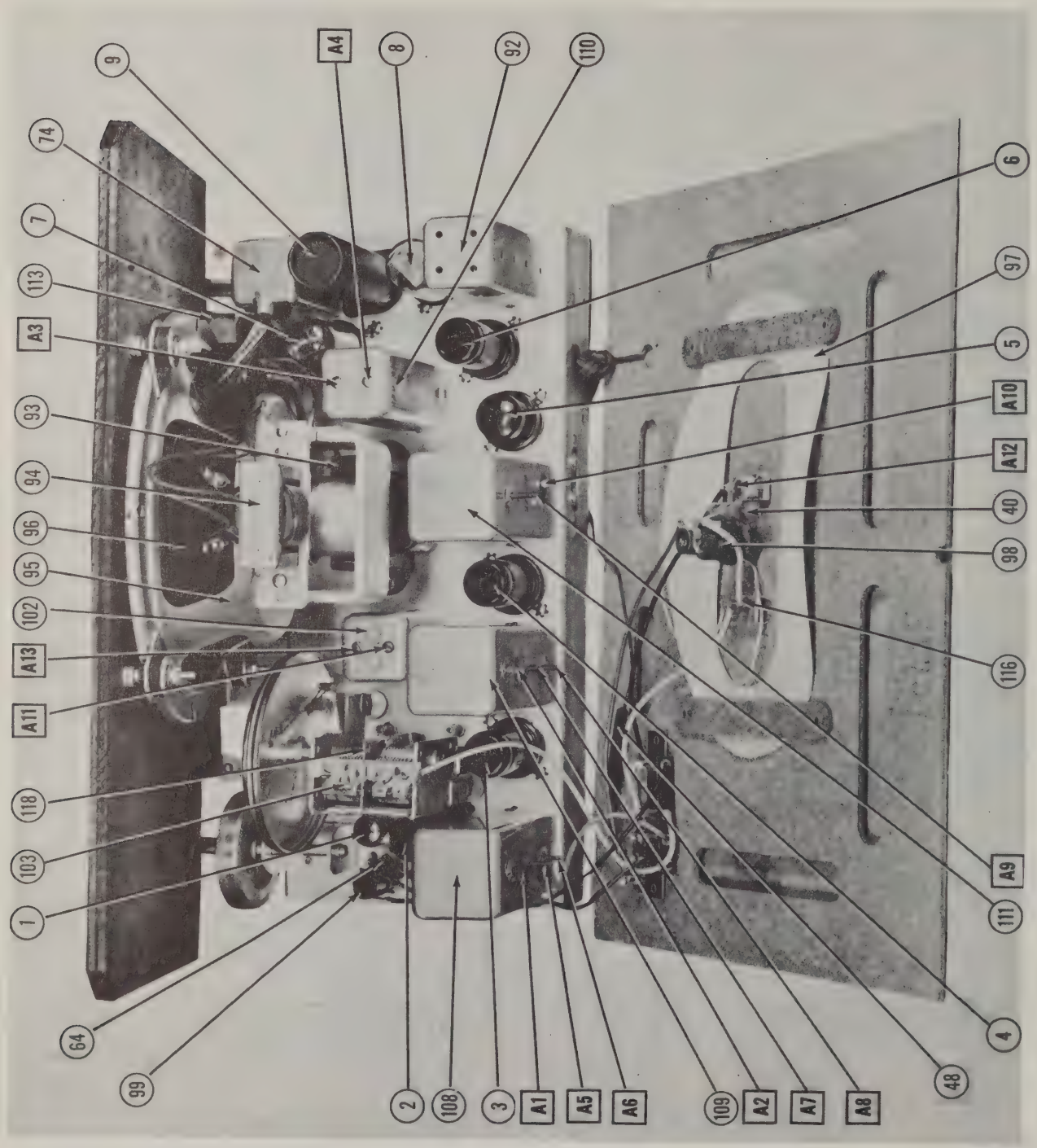
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	PILOT PART No.	IRC PART No.	
75	1000Ω	½	30-264	BTS-1000	Br.-Blk.-Red RF Screen Dropping
76	100KΩ	½	30-270	BTS-100K	Br.-Blk.-Yl. AVC Network
77	1000Ω	½	30-264	BTS-1000	Br.-Blk.-Red Converter Screen Dropping
78	68KΩ	½	30-267	BTS-68K	Blue-Gray-Or. Oscillator Grid
79	1000Ω	½	30-264	BTS-1000	Br.-Blk.-Red 1st IF Screen Dropping
80	2.2 Meg.	½	30-278	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
81	100KΩ	½	30-270	BTS-100K	Br.-Blk.-Yl. FM RF - IF Grid
82	15KΩ	½	30-284	BTS-15K	Br.-Grn.-Or. De-emphasis Network
83	1 Meg.	½	30-277	BTS-1 Meg.	Br.-Blk.-Grn. AF Screen Dropping
84	220KΩ	½	30-271	BTS-220K	Red-Red-Yl. AF Plate Load
85	22KΩ	½	30-266	BTS-22K	Red-Red-Or. AF Plate Decoupling
86	1000Ω	½	30-264	BTS-1000	Br.-Blk.-Red AF Cathode
87	220KΩ	½	30-271	BTS-220K	Red-Red-Yl. Line Isolation
88	470KΩ	½	30-274	BTS-470K	Yl.-Vi.-Yl. Output Grid
89	150Ω	½	31-81	BW-½-150	Br.-Grn.-Br. Output Cathode
90	27Ω	2	31-86	BW-2-27	Red-Vi.-Blk. Filament Shunt
91	30KΩ	½	30-345	BTS-33K	Or.-Blk.-Or. Ratio Detector Bias Network
92	66Ω	25	31-85		Filament Dropping

FILTER CHOKE

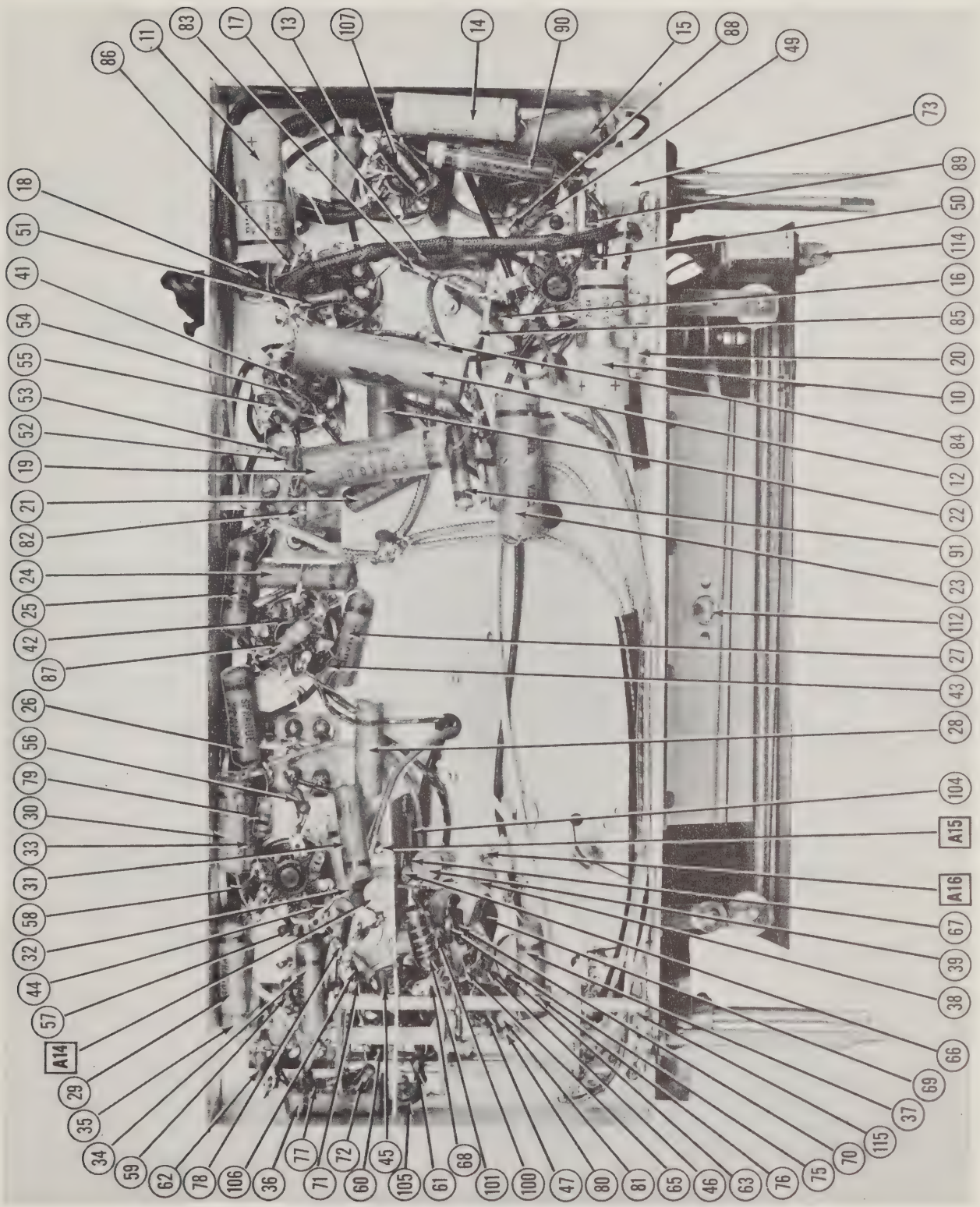
ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	PILOT PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
93	0.085A	110Ω	4.5 Henries	57-9	C-2303*		*Drill one new mounting hole.

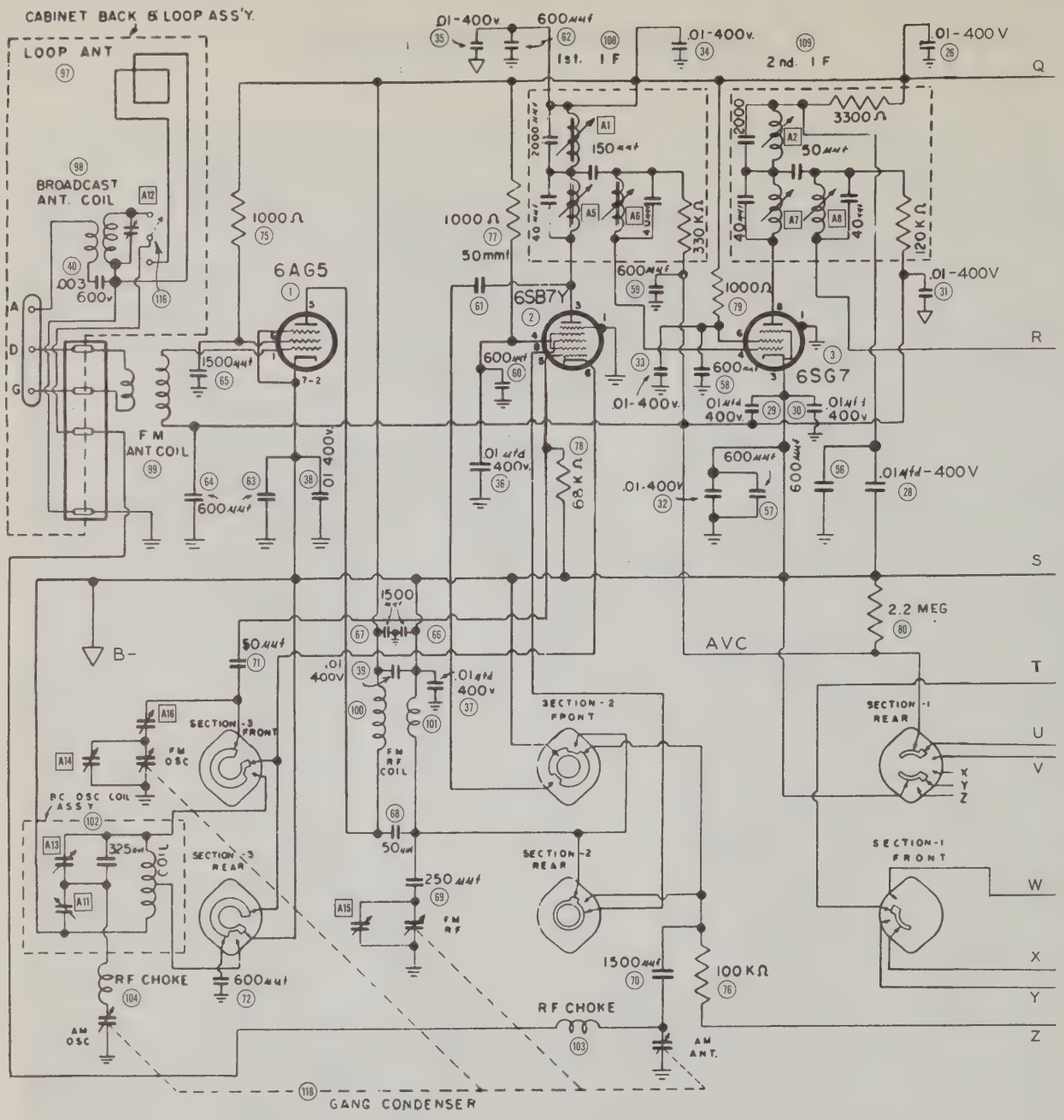


CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW





IF=455KC (AM)

IF=10.7MC (FM)

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6AG5	-6V. DC	0V.	44V. AC	38V. AC	117V. DC	113V. DC	0V.	
2	6SB7Y	0V.	38V. AC	113V. DC	103V. DC	-4.6V. DC	0V.	32V. AC	-4V. DC
3	6SG7	0V.	32V. AC	0V.	-8V. DC	0V.	113V. DC	25V. AC	87V. DC
4	6SG7	0V.	18V. AC	0V.	-8V. DC	0V.	117V. DC	25V. AC	117V. DC
5	6H6	0V.	18V. AC	-2V. DC	0V.	-3V. DC	0V.	12V. AC	-2V. DC
6	6SJ7	0V.	12V. AC	0V.	-4V. DC	-5V. DC	18V. DC	6V. AC	25V. DC
7	25L6 GT	0V.	44V. AC	117V. DC	117V. DC	0V.	0V.	75V. AC	7.6V. DC
8	25Z6 GT	117 V. AC	100 V. AC	117V. AC	128V. DC	117 V. AC	6V. AC	75V. AC	128V. DC

STAGE GAIN MEASUREMENTS

Antenna to Conv. Grid	4.5X	600KC
Conv. Gain	2X	IN 600KC OUT 455KC
Input IF	1X	455KC
1st IF Tube	40X	455KC
2nd IF Trans.	.5X	455KC
2nd IF Tube (Grid to Screen)	15X	455KC
Audio	90X	400
Output	18X	400

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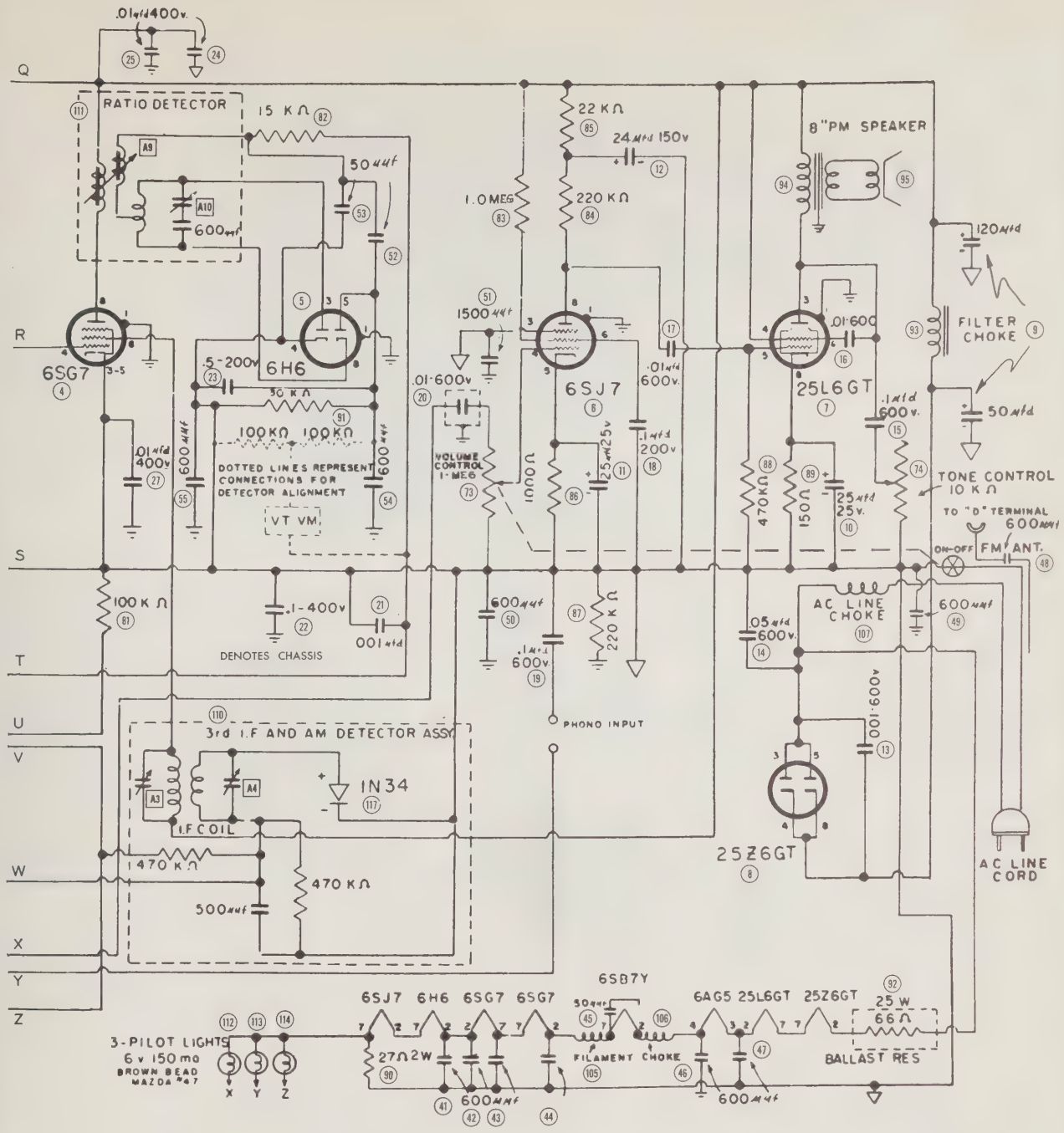
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6AG5	500KΩ	0Ω	29Ω	25Ω	40KΩ	40 KΩ	0Ω	
2	6SB7Y	210 KΩ	25Ω	40KΩ	40 KΩ	65 KΩ	.3Ω	21Ω	600 KΩ
3	6SG7	210 KΩ	21Ω	0Ω	380KΩ	0Ω	40 KΩ	17Ω	45 KΩ
4	6SG7	210 KΩ	12Ω	0Ω	200KΩ	0Ω	40 KΩ	17Ω	40 KΩ
5	6H6	210 KΩ	12Ω	INF.	0Ω	30 KΩ	0Ω	9Ω	INF.
6	6SJ7	210 KΩ	9Ω	0Ω	1 MEG.	1000Ω	1 MEG.	5Ω	280 KΩ
7	25L6GT	210 KΩ	29Ω	40KΩ	40 KΩ	420KΩ	INF.	44Ω	135Ω
8	25Z6GT	120Ω	60Ω	120Ω	40KΩ	120Ω	5Ω	44Ω	40 KΩ

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

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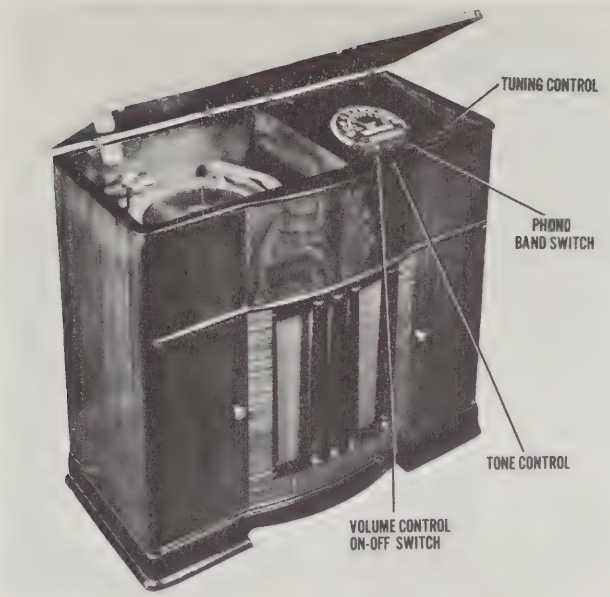
ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer 2-3/8" from left end of dial backplate. In Step 3 use a vacuum tube voltmeter as an output indicator. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 8 (grid) 6SB7Y. Low side to B-.	455KC Modulated	BC	Tuning cap. closed.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to.001 MFD.to reduce hum modulation.
2	.1 MFD.	"	10.7MC Modulated	FM	"	"	A10,A5, A6,A7, A8,A9.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
3	.1 MFD.	"	"	"	"	Connect 2 100KΩ resistors across resistor (91) High side to junction of the two 100KΩ resistors. Low side to junction of resistor (82) and cap.(21).	A10	Adjust for zero output. (Meter should register reverse polarity when A10 is turned slightly to the right, and then to the left of zero output.) Remove two 100K resistors.
4	200MMFD	High side to ext. ant. terminal. Low side to chassis.	1500KC Modulated	BC	1st reference mark at right end of dial back plate.	Across voice coil	A11	Ant. switch must be in ext. ant. position in Steps 4, 5 and 6. Adjust for maximum output.
5	200MMFD	"	"	"	Tune for maximum output.	"	A12	"
6	200MMFD	"	600KC Modulated	"	"	"	A13	Rock tuning cap and adjust for maximum output. Repeat Steps 4, 5, and 6 and replace bottom plate of chassis.
7	DIRECT	Across ant. terminal board connections "D" and "G".	106MC (freq. modulated 150KC)	FM	2nd ref.mark from right end of dial back plate.	"	A14,A15	Adjust for maximum output
8	DIRECT	"	90MC (freq.modulated 150KC)	"	1st ref.mark from left end of dial back plate.	"	A16	Adjust for maximum output Repeat Steps 7 & 8.

SONORA
MODEL RMR 219



SONORA
MODEL RMR 219

SONORA MODEL RMR 219

TRADE NAME	Sonora, Model RMR 219
MANUFACTURER	Sonora Radio & Television Corp., 325 N. Hoyne Ave., Chicago, Ill.
TYPE SET	AC Operated Phono-Radio Combination - 2 Band Superheterodyne with Loop Antenna
TUBES (EIGHT)	Types, 6SG7 Mixer, 6J5 Osc., 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6SQ7 Phase Inverter, (2) 25L6GT Power Output, 25Z6GT Rectifier.

POWER SUPPLY 110-120 Volts AC — RATING .440 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST 535-1620KC — **SHORT WAVE** 5.65-18.3MC

ALIGNMENT INSTRUCTIONS--READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 4 (grid) 6SG7. Low side to B-.	455KC	BC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001MFD to reduce hum modulation.
2	100MMFD	High side to ext. ant. lug. Low side to B-.	1620KC	"	"	"	A5	Adjust for maximum output.
3	100MMFD	"	1400KC	"	Tune for maximum output.	"	A6	" " " "
4	100MMFD	"	600KC	"	"	"	A7	Rock tuning cap. and adjust for maximum output. Repeat Steps 2, 3, 4.
5	400Ω	"	18.3MC	SW	Tuning cap. fully open.	"	A8	Adjust for maximum output. Check for image by tuning receiver to approximately 17.4MC. If image is not heard open tuning cap. fully and open A8 until Next peak is obtained. Adjust for maximum output and recheck for image.
6	400Ω	"	15MC	"	Tune for maximum out.	"	A9	Rock tuning cap. and adjust for maximum output. Install in cabinet & connect loop.
7		Loop	1400KC	BC	"	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adj. for max. output
8		"	15MC	SW	"	"	A9	"

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Mixer	6SG7	6SG7	8BK	
2	Oscillator	6J5	6J5	6Q	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Phase Inverter	6SQ7	6SQ7	8Q	
6	Power Output	25L6GT	25L6GT	7AC	
7	Power Output	25L6GT	25L6GT	7AC	
8	Rectifier	25Z6GT	25Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

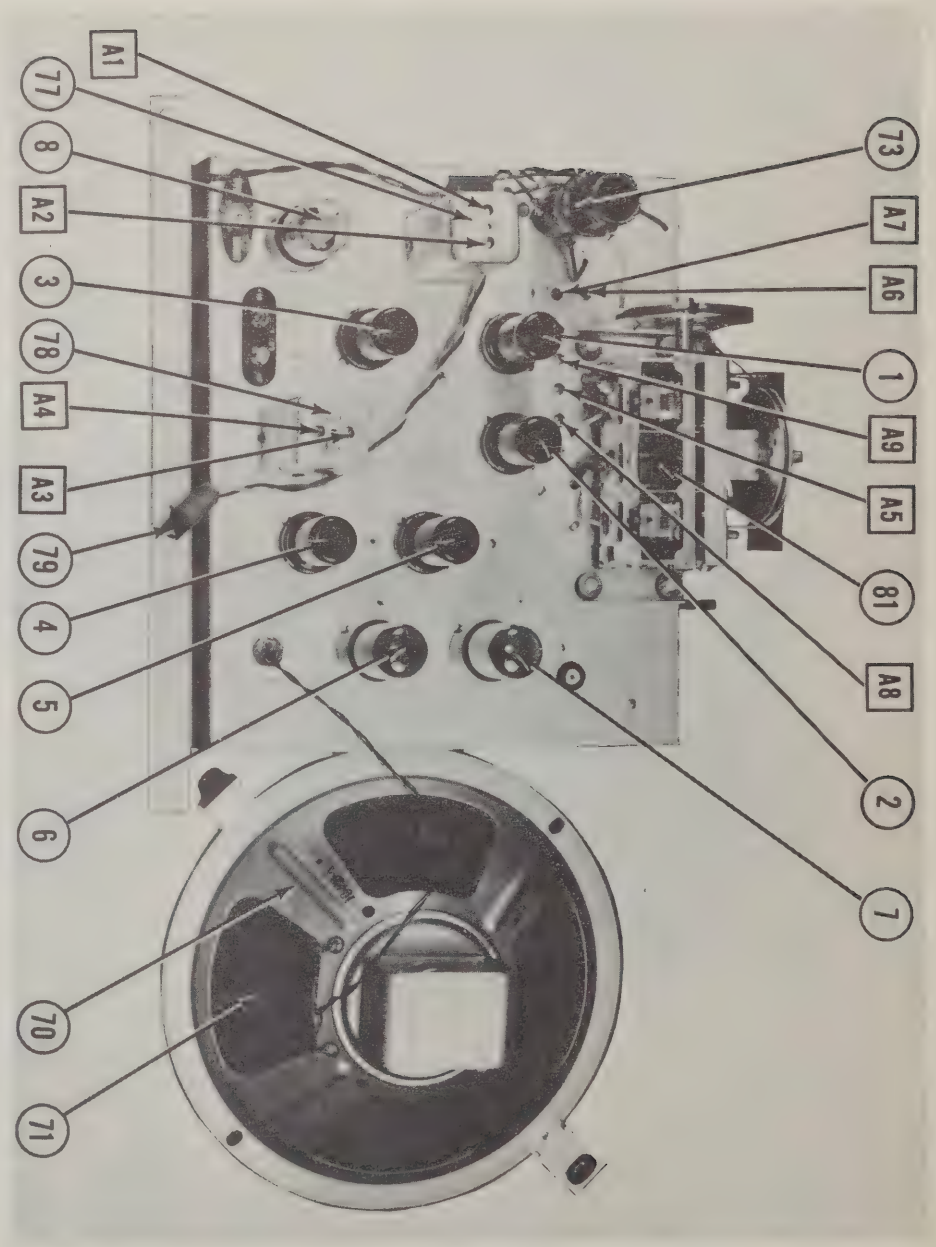
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SONORA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	100	150	N-5595	AF888D	UP7DJ19‡		DY-419	EL-25	■ Filter
B	30	150						TA-330	▲ "
C	30	150		PRS150-50	BR3015		M-50-150		"
10	.05	400	N-1346	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
11	.01	600	N-1478	684-01	DT6S1	TP410	S-6-01	TC-11	Audio Plate Bypass
12	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
13	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	" "
14	.005	600	N-4894	684-005	DT6D5	TP408	S-6-005	TC-25	Tone Compensation
15	.1	200	N-1351	484-.1	DT4P1	TP428	S-4-1	TC-1	Plate Decoupling
16	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
17	.1	200	N-1351	484-.1	DT4P1	TP421	S-4-1	TC-1	RF Bypass Pwr. Supp.
18	.005	600	N-4894	684-005	DT6D5	TP408	S-6-005	TC-25	Audio Coupling
19	.02	400	N-1376	484-02	DT4S2	TP423	S-4-02	TC-12	Tone Compensation
20	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	IF Cath. Bypass
21	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
22	.08	200	N-4957						Phono Isolation
23	.1	200	N-1351	484-.1	DT4P1	TP428	S-4-1	TC-1	Mixer Plate Decoup.
24	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	Mixer Cath. Bypass
25	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	Ant. Isolation
26	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	Feedback
27	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	Tuning Cap. Isolation
28	.2	400	N-5160	484-.2	DT4P2	TP429	S-4-2	TC-2	Line Isolation
29	200	500	N-2306	1468-0002	5W5T2	MC237	MO.5-32	1FM-32	Audio Plate Bypass
30	25	500	N-1897	1468-000025	5W5Q25	MC220	MO.5-425	1FM-425	Diode Filter
31	50	500	N-1342	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	" "
32	50	500	N-1342	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	RF Filter
33	150	500	N-2383	1468-00015	5W5T15	MC236	MO.5-315	1FM-315	Phono Coupling
34	50	500	N-1342	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
35	200	500	N-2306	1468-0002	5W5T2	MC237	MO.5-32	1FM-32	RF Coupling
36	100	500	N-1374	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Ant. Pri. Shunt
37	4000	300	N-1690	1467-004	1W5D4	MC463	MW.5-24	1FM-24	Feedback

‡Parallel two 40 MFD sections and omit bypass.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
38A	500KΩ	1	N-5651	TM227	D13-133X	AT-78	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 38A per instructions
C	Switch		" "	M26	41	SW-A	" " " "
39A	500KΩ	1	N-5578				Tone Control
B	Shaft		Not Req.				Attach to 39A per instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SONORA PART No.	IRC PART No.	
40	39Ω	½	N-5688	BW-½-39	Or.-White-Blk. Parasitic Suppressor
41	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. Line Isolation
42	10KΩ	½	N-4895	BTS-10K	Br.-Blk.-Or. Oscillator Plate Load
43	22KΩ	½	N-4025	BTS-22K	Red-Red-Or. Oscillator Grid
44	1 Meg.	½	N-1262	BTS-1 Meg.	Br.-Blk.-Grn. Series Phono
45	3.3 Meg.	½	N-4062	BTS-3.3 Meg.	Or.-Or.-Grn. Mixer Grid
46	2200Ω	½	N-4896	BTS-2200	Red-Red-Red Mixer Cathode
47	39KΩ	½	N-5692	BTS-39K	Or.-White-Or. Mixer Plate Decoupling
48	33KΩ	½	N-4064	BTS-33K	Or.-Or.-Or. RF Filter
49	1 Meg.	½	N-1262	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
50	33KΩ	½	N-4064	BTS-33K	Or.-Or.-Or. RF Filter
51	33KΩ	½	N-4064	BTS-33K	Or.-Or.-Or. Diode RF Filter
52	220Ω	½	N-5632	BW-½-220	Red-Red-Br. IF Cathode
53	22KΩ	½	N-5691	BTS-22K	Red-Red-Or. Tone Compensation
54	6.8 Meg.	½	N-4028	BTS-6.8 Meg.	Blue-Gray-Grn. AF Grid
55	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. AF Plate Load
56	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. Phase Inverter Plate Load
57	68KΩ	½	N-5693	BTS-68K	Blue-Gray-Or. Phase Inverter Plate Decoupling
58	6.8 Meg.	½	N-4028	BTS-6.8 Meg.	Blue-Gray-Grn. Phase Inverter Grid
59	470KΩ	½	N-5694	BTS-470K	Yl.-Vi.-Yl. Output Grid
60	12KΩ	½	N-5690	BTS-12K	Br.-Red-Or. Output Grid
61	470KΩ	½	N-5694	BTS-470K	Yl.-Vi.-Yl. Output Grid
62	100Ω	1	N-1692	BW-1-100	Br.-Blk.-Br. Output Cathode
63	330Ω	½	N-5689	BW-½-330	Or.-Or.-Br. Filter
64	330Ω	½	N-5689	BW-½-330	Or.-Or.-Br. "
65	12Ω	½	N-5053	BW-½-12	Br.-Red-Blk. Surge Limiter
66	12Ω	½	N-5053	BW-½-12	Br.-Red-Blk. " "
67	12Ω	1	N-6016	BW-1-12	" " Pilot Light Shunt
68A	19Ω	5	N-5594	AB-20	" " "
B	43Ω	4		ABA-50	" " Line Dropping-See Note

Note-On IRC replacement set slider at 43Ω from one end.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SONORA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
69	3500Ω CT	3.3Ω	260Ω CT	.4Ω	N-5588	A-3825	T22S60		

SPEAKER

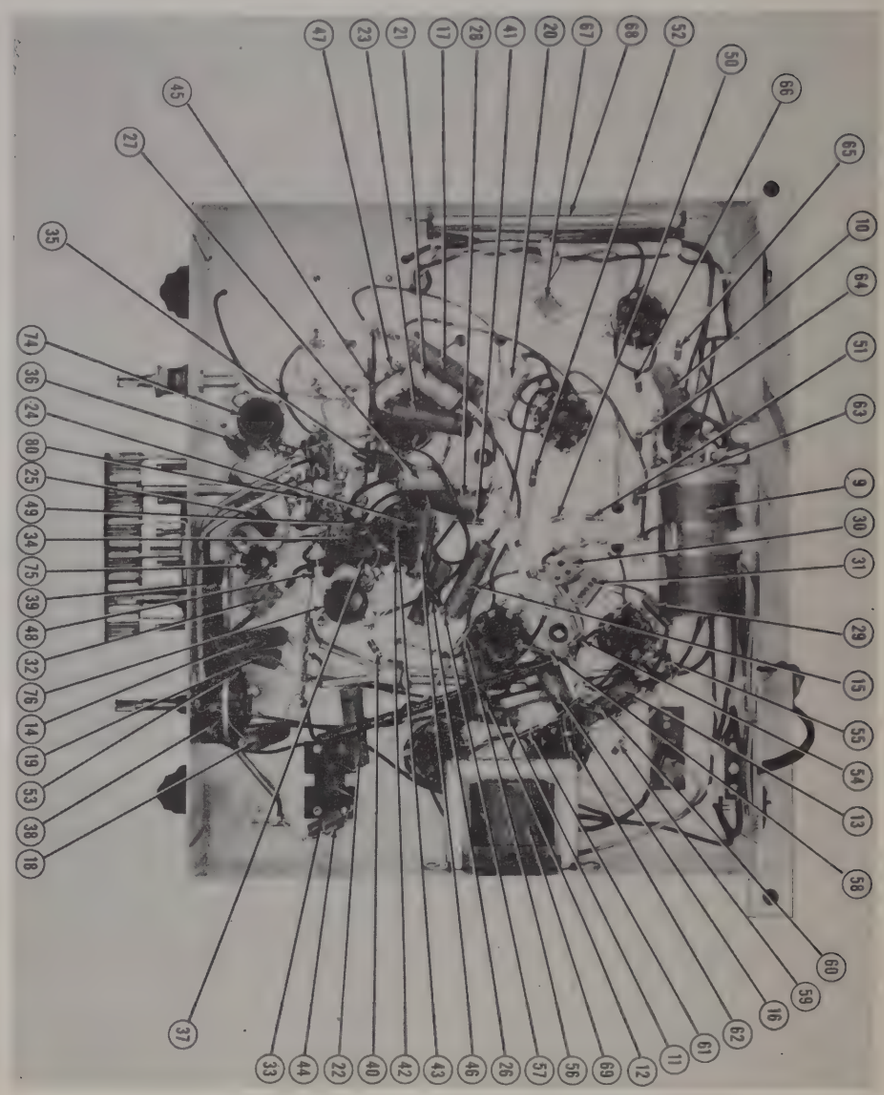
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	VC IMP.	SONORA PART No.	JENSEN PART No.		
70A	PM	3.3Ω	N-5892	ST-119† Mod. P10-T		†Replace output transformer to match 8Ω voice coil. Alternate 12" PM speaker.
B			N-5172			
	CONE DIA.	VC DIA.				
71	9-3/4"	1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SONORA PART No.	MEISSNER PART No.	
72	Loop Ant.					
73	BC Ant.Coil	.6Ω	4.5Ω	N-5165		
74	SW Ant.Coil	2.2Ω	0Ω	N-5166		
75	BC Osc.Coil	2Ω	7.5Ω .7Ω*	N-5163		
76	SW Osc.Coil	.5Ω	0Ω .2Ω*	N-5164		
77	Input IF	22Ω	22Ω	N-5173	16-6658	
78	Output IF	21Ω	21Ω	N-5174	16-6660	

*Pickup winding.

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

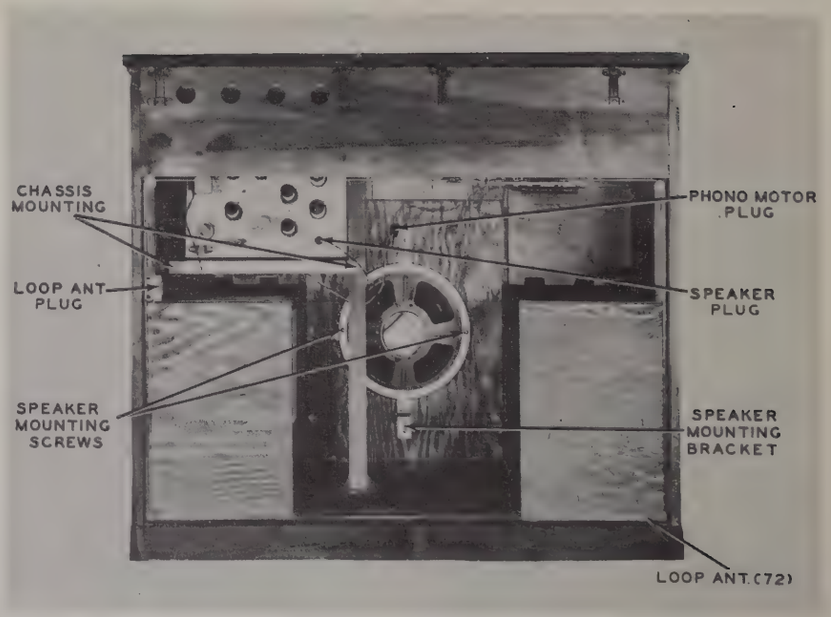
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					SONORA PART No.		
79	Bayonet	6.3	0.25	Blue	N-1571		Type 44

MISCELLANEOUS

ITEM No.	PART NAME	SONORA PART No.	NOTES
80	Switch	N-5167	Band-Phono
81	2 Gang Var. Cap.	N-5152	(14-460 MMF) each section
A5	Trimmer Strip	N-5593	BC Osc. Adj.
A8			SW Osc. Adj.
A9			SW Ant. Adj.
A6	Trimmer Strip	N-5592	BC Ant. Adj
A7			BC Osc. Padder

PUSHBUTTON ADJUSTMENTS

1. Apply power to receiver and allow it to warm up for about 15 minutes.
2. Remove buttons by pulling gently straight forward.
3. Loosen each pushbutton shaft screw a few turns.
4. Manually tune in first station desired to be set up. Hold manual control firmly to prevent detuning and push in completely any pushbutton shaft.
5. Release pushbutton shaft and tighten its screw firmly.
6. Check accuracy of setting by detuning with manual control and retuning with push-button shaft. If setting is off, repeat Steps 3 through 5.
7. To set up the remaining buttons follow the same procedure as outlined above.



DISASSEMBLY INSTRUCTIONS

1. Remove four push on type control knobs.
2. Remove four Phillips head screws from dial. Remove dial and take off dial pointer.
3. Remove antenna plug from cabinet.
4. Remove speaker plug from chassis.
5. Disconnect phono-motor plug.
6. Remove phono-pickup plug from chassis.
7. Remove two hex head bolts holding chassis in cabinet. Remove chassis.
8. Remove six wood screws holding speaker in cabinet. Remove speaker.

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

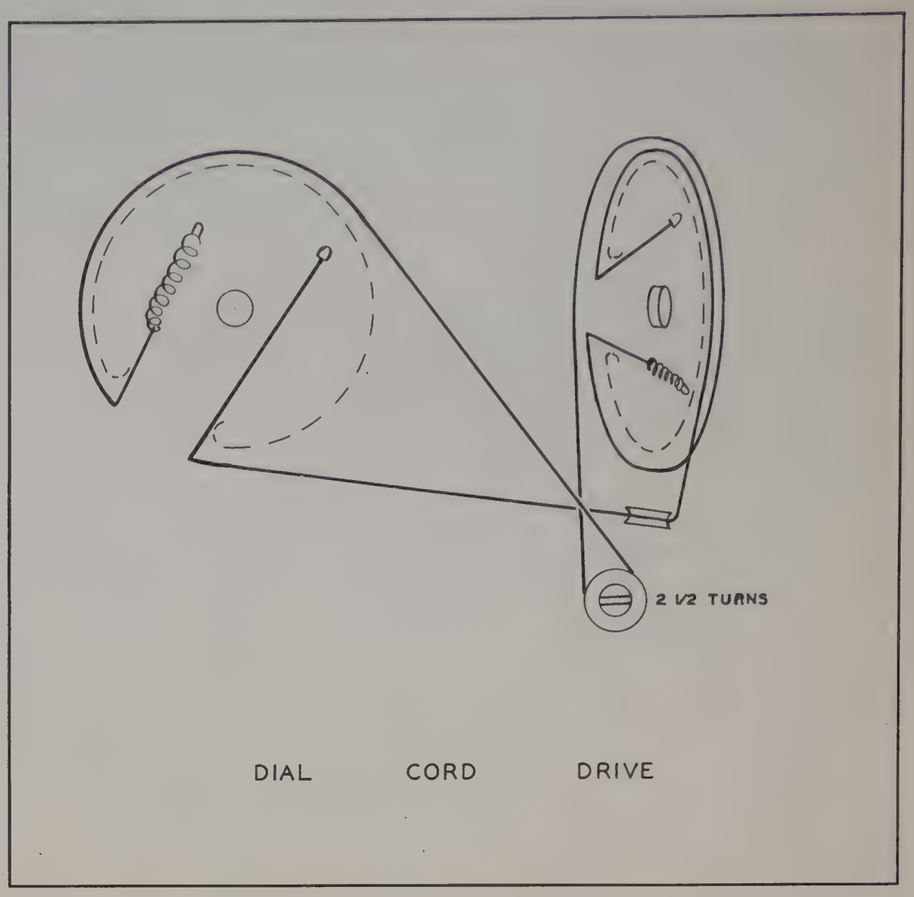
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	0V.	18V. AC	2.6V. DC	-.1V. DC	2.6V. DC	55V. DC	12.5V. AC	55V. DC
2	6J5	0V.	24V. AC	65V. DC	98V. DC	-10V. DC	0V.	18V. AC	0V.
3	6SK7	0V.	30V. AC	2.5V. DC	-.1V. DC	2.5V. DC	98V. DC	24V. AC	98V. DC
4	6SQ7	0V.	-.6V. DC	0V.	-2.5V. DC	-2.5V. DC	55V. DC	0V.	7V. AC
5	6SQ7	0V.	-.7V. DC	0V.	0V.	0V.	55V. DC	12.5V. AC	7V. AC
6	25L6GT	0V.	60V. AC	105V. DC	102V. DC	0V.	0V.	85V. AC	7.5V. DC
7	25L6GT	0V.	30V. AC	105V. DC	102V. DC	0V.	110V. DC	60V. AC	7.5V. DC
8	25Z5GT	0V.	85V. AC	113V. AC	110V. DC	113V. AC	0V.	102V. AC	110V. DC

RESISTANCE READINGS

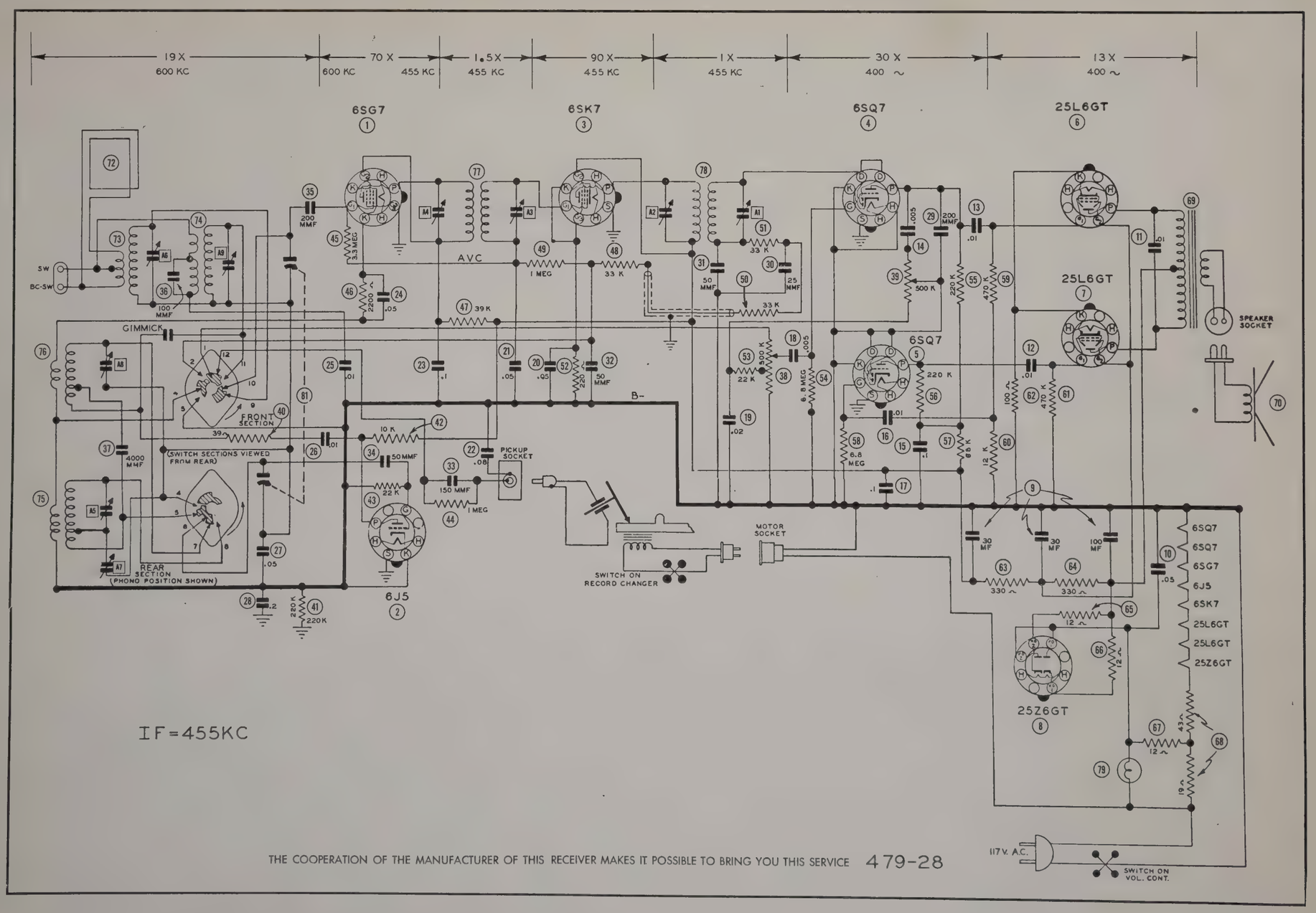
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SG7	200 K Ω	16 Ω	2.2K Ω	5 MEG.	2.2K Ω	190 K Ω	11 Ω	190 K Ω
2	6J5	200 K Ω	21 Ω	160 K Ω	150 K Ω	22 K Ω	1.5MEG.	16 Ω	0 Ω
3	6SK7	200 K Ω	26 Ω	200 Ω	1.5MEG.	200 Ω	150 K Ω	21 Ω	150 K Ω
4	6SQ7	200 K Ω	6.8MEG	0 Ω	550 K Ω	550 K Ω	440 K Ω	0 Ω	5 Ω
5	6SQ7	200 K Ω	6.8MEG	0 Ω	0 Ω	0 Ω	440 K Ω	11 Ω	5 Ω
6	25L6GT	INF.	41 Ω	150 K Ω	150 K Ω	470K Ω	INF.	58 Ω	100 Ω
7	25L6GT	INF.	26 Ω	150 K Ω	150 K Ω	400 K Ω	150 K Ω	41 Ω	100 Ω
8	25Z6GT	INF.	58 Ω	130 Ω	150 K Ω	130 Ω	INF.	75 Ω	150 K Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

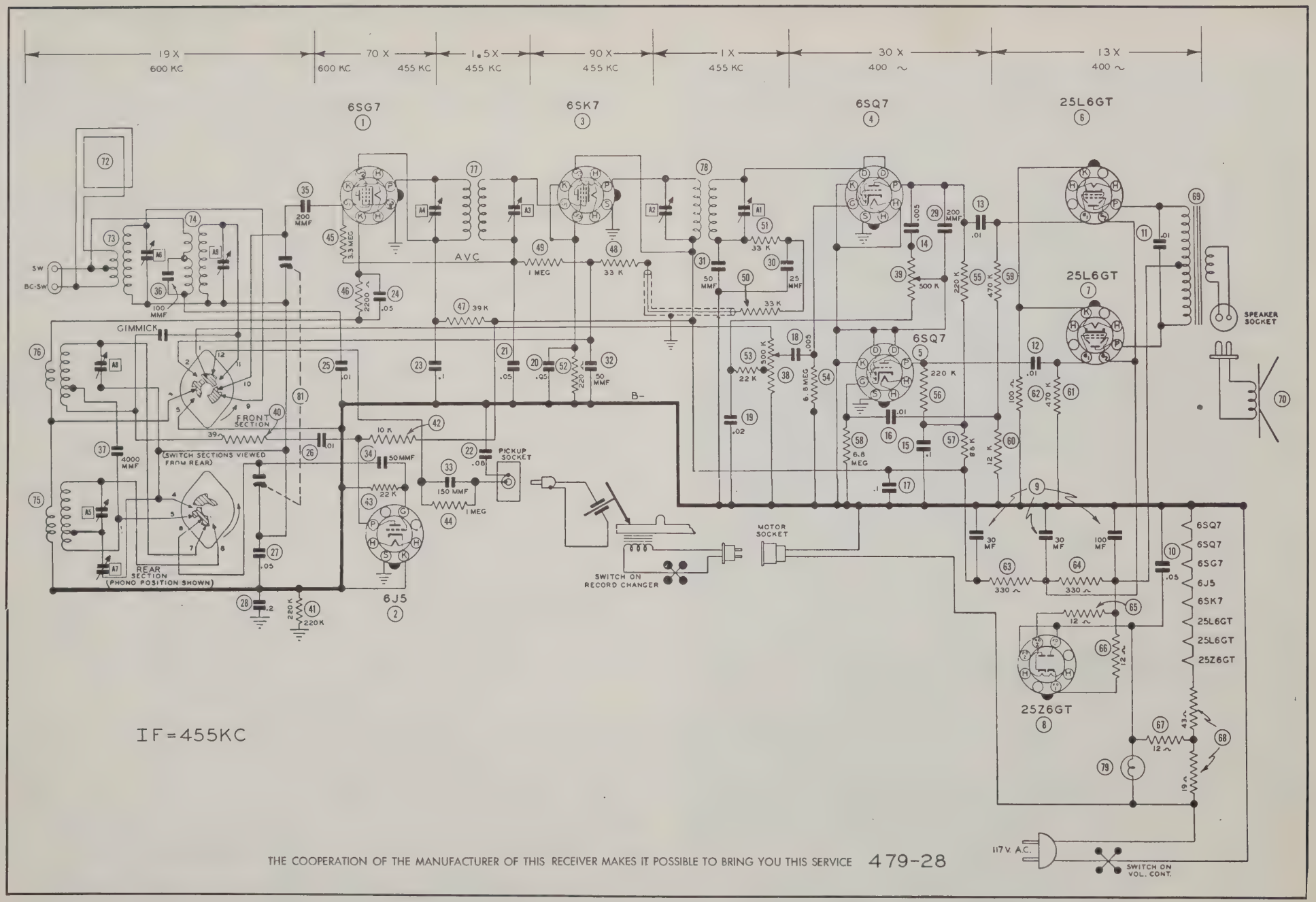


DIAL CORD DRIVE



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 479-28

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



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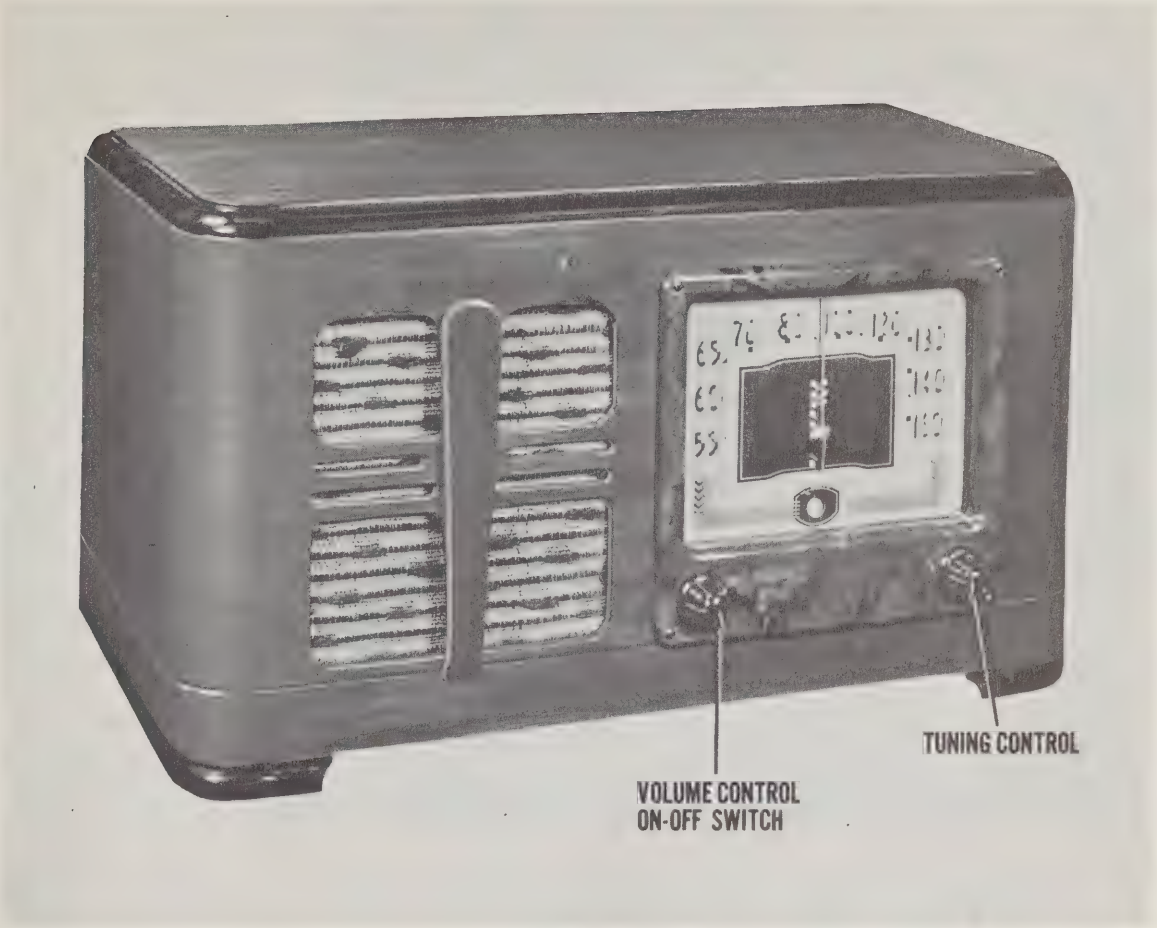
SONORA
MODEL RX-223 (BATTERY OPERATED)



SONORA
MODEL RX-223 (BATTERY OPERATED)

SONORA MODEL RX-223

TRADE NAME	Sonora, Model RX-223
MANUFACTURER	Sonora Radio & Tel. Corp., 325 Hoyne Ave., Chicago, Ill.
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types, 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output
POWER SUPPLY	1½ Volt "A" Supply & 90 Volt "B" Supply in Pack Form
RATING	260MA @ 1.5 Volts DC & 12MA @ 90 Volts DC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer parallel with base of dial. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to grid cap of 1A7. Low side to chassis.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3.	Adjust for maximum output.
2	200MMFD	High side to ext ant. Lead. Low side to chassis.	1620KC	"	"	A4	" " " "
3	200MMFD	"	1400KC	Tune for maximum output.	"	A5	" " " "

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1A7GT	1A7GT	7Z	
2	IF Amp.	1N5GT	1N5GT	5Y	
3	Det.-AVC-AF	1H5GT	1H5GT	5Z	
4	Power Output	3Q5GT	3Q5GT	7AF	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SONORA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5	6	150	N-1367	PRS150-8	BR815	TC42	M-8-150	UT-81	Pwr. Supp. Bypass
6	.005	600	N-4894	684-005	DT6D5	TP408	S-6-005	TC-25	Output Plate Bypass
7	.01	400	N-1344	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
8	.005	600	N-4894	684-005	DT6D5	TP408	S-6-005	TC-25	" "
9	.02	400	N-1376	484-02	DT4S2	TP423	S-4-02	TC-12	IF Grid Filter
10	.1	200	N-1351	484-02	DT4P1	TP428	S-4-1	TC-1	Pwr. Supp. Bypass*
11	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	Conv. Screen Bypass
12	.05	200	N-1345	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
13	100	500	N-1374	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Audio Plate Bypass
14	100	500	N-1374	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	IF Bypass Diode
15	10	500		1468-00001	5W5Q1	MC215	MO.5-41	MS-41	Fixed Trimmer *

*Not used in all models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	1 Meg.	1	N-3411	MR53	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

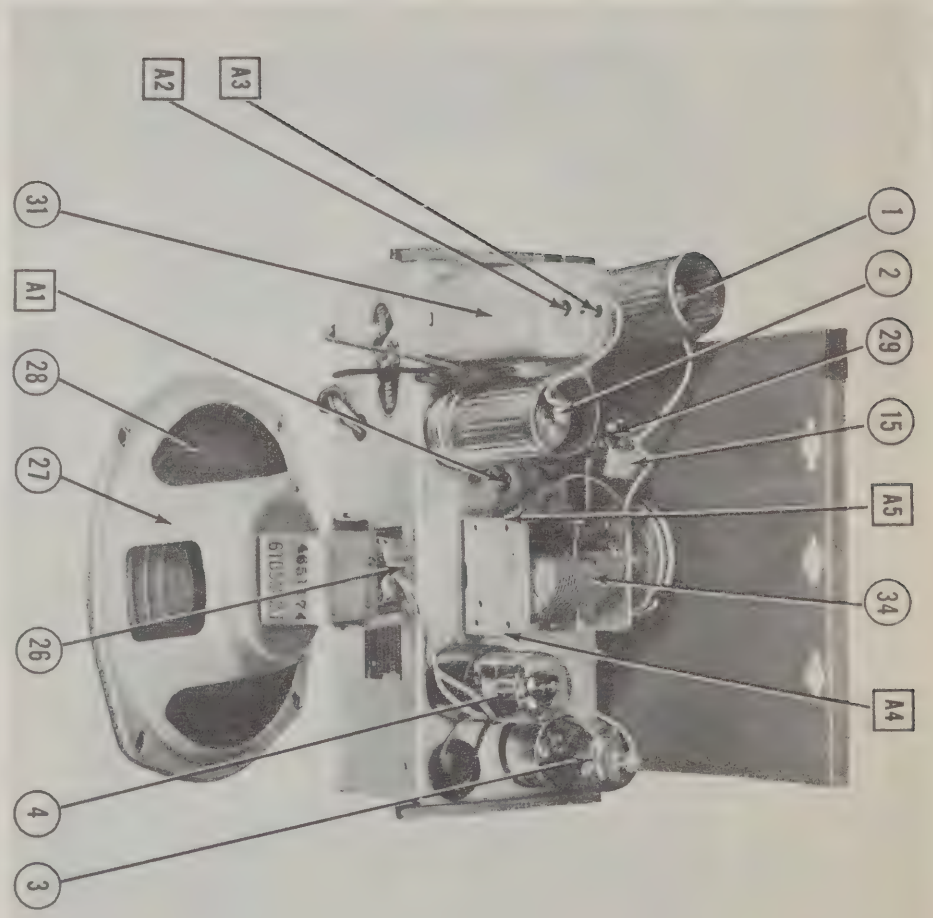
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	IRC PART No.	IDENTIFICATION CODES
17	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. Oscillator Grid
18	56KΩ	½	N-4823	BTS-56K	Grn.-Blue-Or. Converter Screen Dropping
19	10 Meg.	½	N-1263	BTS-10 Meg.	Br.-Blk.-Blue IF Grid
20	2.2 Meg.	½	N-4277	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
21	2.2 Meg.	½	N-4277	BTS-2.2 Meg.	Red-Red-Grn. AF Grid
22	1 Meg.	½	N-1262	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
23	47KΩ	½	N-4063	BTS-47K	Yl.-Vi.-Or. Diode RF Filter
24	2.2 Meg.	½	N-4277	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
25	470Ω	½	N-4066	BTS-470	Yl.-Vi.-Br. Bias

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SONORA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26	5800Ω	3.3Ω	460Ω	.55Ω	Part of N-3406	A-3877 †	T21.4c †		† Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
27	FIELD	VC IMP.	N-3400	JT-1.5		
		3.2Ω		40-1.5-X		
28	VOICE COIL	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
		1/2"				

R F COILS

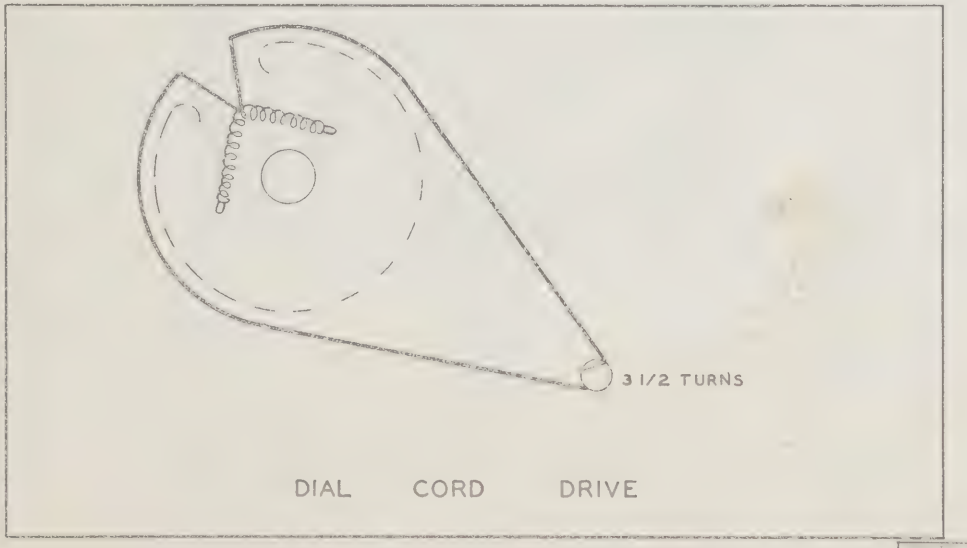
ITEM No.	USE	DC RES. PRI	DC RES. SEC.	REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: MEISSNER PART No.	
29	Ant. Coil	30Ω	4.5Ω	N-4[illegible]4	14-1[illegible]26	
30	Osc. Coil	1.3Ω	6.3Ω	N-4[illegible]8	14-1040	Add 50MMFD from grid to high side tuning cap.
31	Input IF	15Ω	14.5Ω	N-5231	16-6658	
32	Output IF	16Ω	16Ω	N-[illegible]230		

BATTERIES

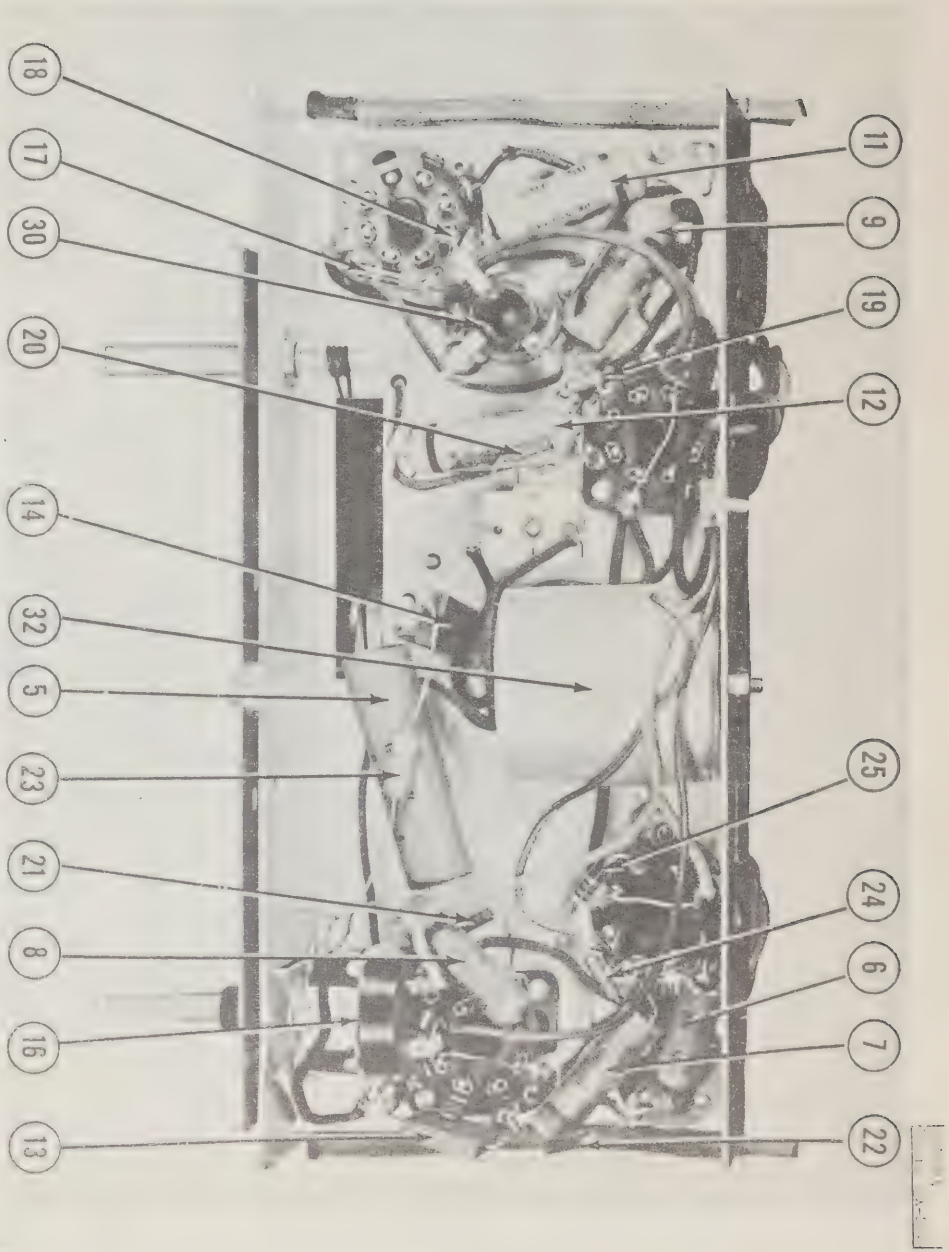
ITEM No.	VOLTAGE	SONORA PART No.	EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	INSTALLATION NOTES
33	1.5V "A" 90V "B"				#788	

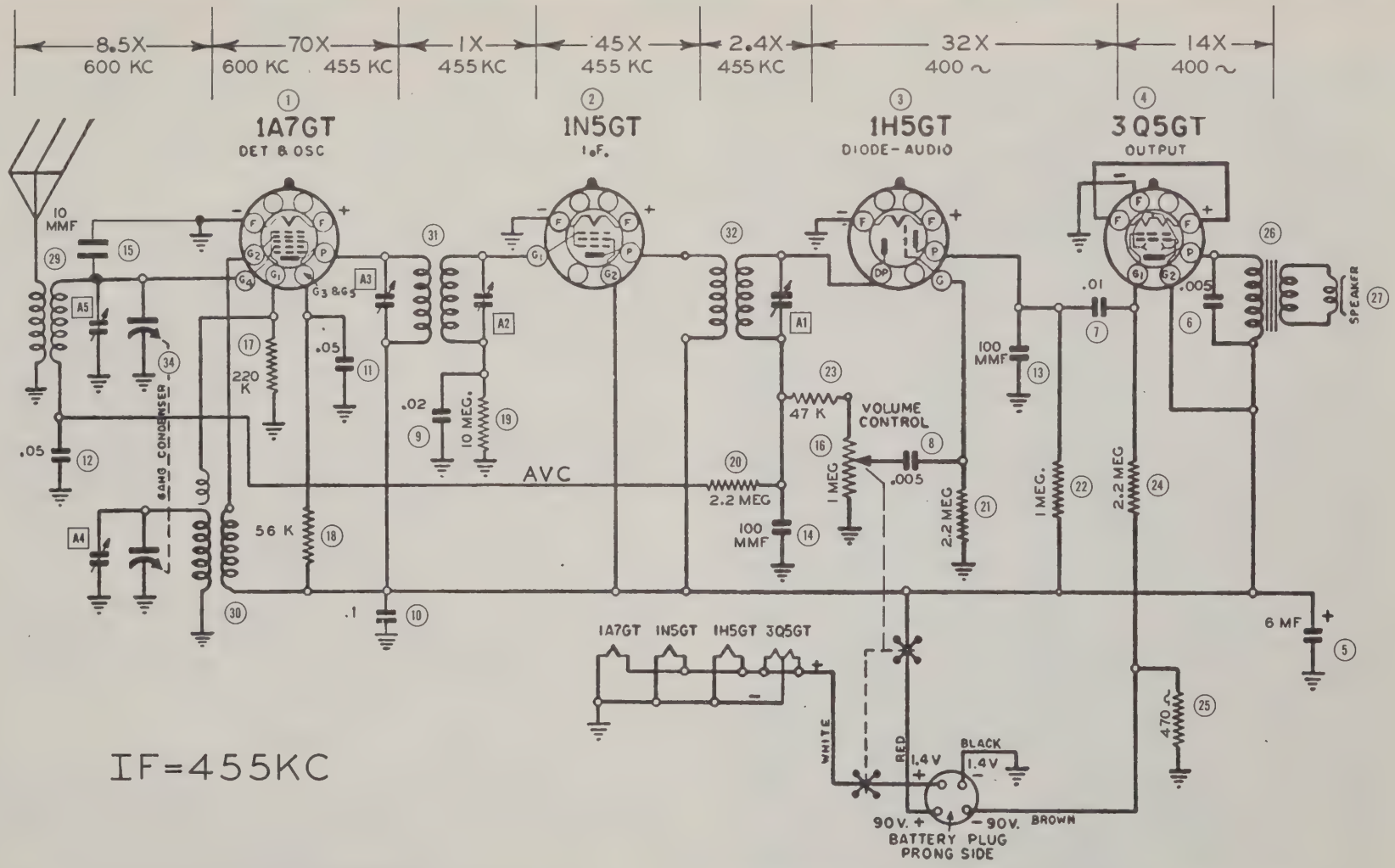
MISCELLANEOUS

ITEM No.	PART NAME	SONORA PART No.	NOTES
34	2 Gang Var. Cap	N-4824	21-477 MMF, 32-197 MMF
	Battery Cable	N-4147	



CHASSIS—BOTTOM VIEW





IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT		55 V DC	90 V DC	50 V DC	0 V	90 V DC	0 V	0 V	0 V
2	1N5GT		55 V DC	90 V DC	90 V DC	0 V	0 V	0 V	90 V DC	0 V
3	1H5GT		55 V DC	57 V DC	0 V	0 V	0 V	0 V	0 V	0 V
4	3Q5GT	0 V	55 V DC	86 V DC	90 V DC	-2 V DC	-54 V DC	55 V DC	0 V	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT		*	120 KΩ	180 KΩ	200 KΩ	120 KΩ	0 Ω	INF.	3.2 MEG.
2	1N5GT		*	120 KΩ	120 KΩ	2.8 MEG.	10 MEG.	0 Ω	120 KΩ	10 MEG.
3	1H5GT		*	1.1 MEG.	INF.	1 MEG.	INF.	0 Ω	2.1 MEG.	2.1 MEG.
4	3Q5GT	INF.	*	120 KΩ	120 KΩ	2 MEG.	400 Ω	*	0 Ω	

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

479-29

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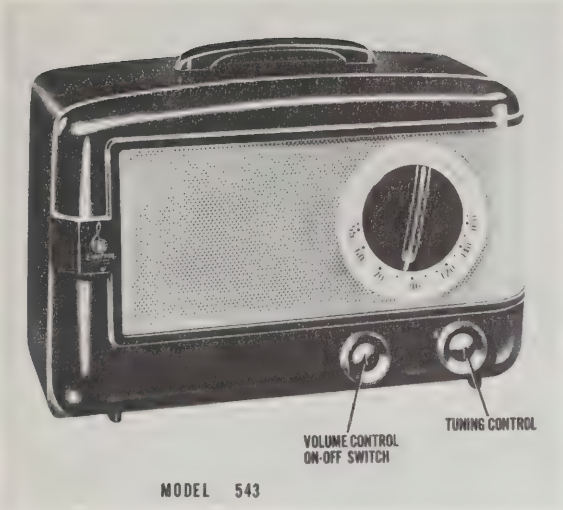
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to chassis during stage gain measurement.

1. DC Voltage measurements are at 20,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

EMERSON
MODELS 543, 544



MODEL 543

MODEL 544

EMERSON
MODELS 543, 544

EMERSON MODEL 544

TRADE NAME	Emerson, Models 543, 544 (Ch. 120046)
MANUFACTURER	Emerson Radio & Phono Corp., 111 Eighth Ave., New York, N.Y.
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier.
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .230 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use isolation transformer if available. If not, connect a capacitor in series with low side of signal generator and B-. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to stator of front section of tuning cap. Low side to B-.	455KC	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	200MFD.	High side to ext. ant. lead. Low side to ext. grnd. lead.	1620KC	"	"	A5	Adjust for maximum output.
3	200MFD.	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

EMERSON MODEL 9 [illegible]

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12BE6	12BE6	7CH	
2	IF Amp.	12BA6	12BA6	7CC	
3	Det.-AVC-AF	12AT6	12AT6	7BT	
4	Power Output	50B5	50B5	7BZ	
5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	50	150	925009	PRSA150-50-	EZ5515	2N521	M-2x50-150	TA-550	Filter - Red
B	50	150		50					" - Green
7	.05	400	920030	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.02	400	920020	484-02	DT4S2	TP423	S-4-02	TC-12	Output Plate Bypass
9	.02	400	920020	484-02	DT4S2	TP423	S-4-02	TC-12	Audio Coupling
10	.002	600	920010	684-002	DT6D2	TP405	S-6-002	TC-22	" "
11	.1	200	920040	484-.1	DT4P1	TP428	S-4-1	TC-11	AVC Filter
12	.2	200	920050	484-.2	DT4P2	TP429	S-4-2	TC-2	Line Isolation
13	500	500	920240	1468-0005	SW5T5	MC245	MO.5-35	1FM-35	Audio Plate Bypass
14	220	500	910000	1468-0002	SW5T1	MC237	MO.5-322	1FM-32	IF Bypass Vol. Cont.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	1	390015	UM156	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " "

RESISTORS

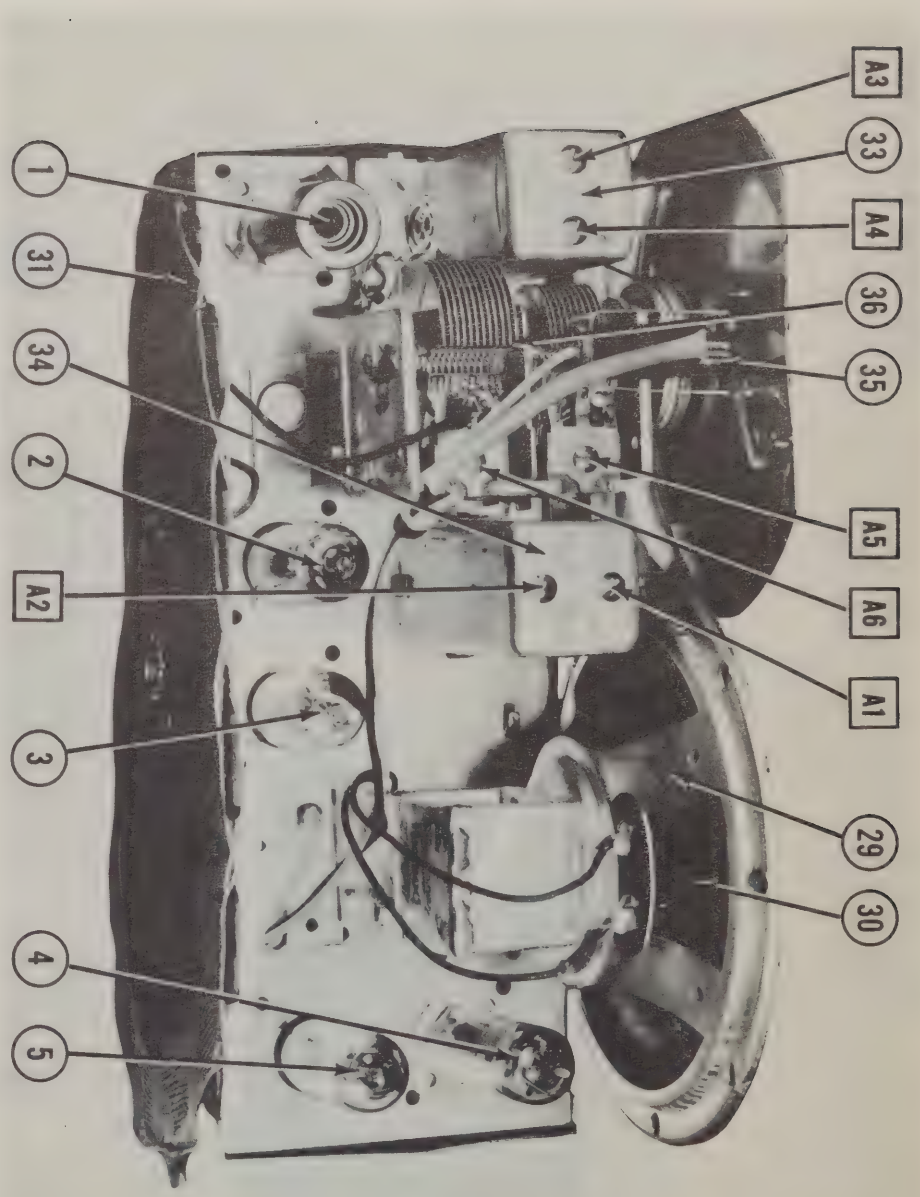
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
16	22KΩ	¼	310810	BTS-22K	Red-Red-Or. Oscillator Grid
17	220KΩ	¼	321050	BTS-220K	Red-Red-Yl. Line Isolation
18	15 Meg.	½	397000	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
19	2.2 Meg.	¼	321290	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
20	180Ω	½	340310	BW-½-180	Br.-Gray-Br. IF Cathode
21	15 Meg.	½	397000	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
22	470KΩ	¼	321130	BTS-470K	Yl.-Vi.-Yl. AF Plate Load
23	470KΩ	¼	321130	BTS-470K	Yl.-Vi.-Yl. Output Grid
24	150Ω	½	340290	BW-½-150	Br.-Grn.-Br. Output Cathode
25	1000Ω	1	370490	BTA-1000	Br.-blk.-Red Filter
26	15Ω	½	340050	BW-½-15	Br.-Grn.-Blk. Rectifier Ballast
27	10Ω	½	340010	BW-½-10	Br.-Blk.-Blk. Series Pilot Light-See Note

Note-Not used in all models.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
28	2010Ω	3.2Ω	224Ω tapped @ 9Ω	.85Ω	734000	A-3876*			*Add extra filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: EMERSON PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107†		†Fabricate new mounting bracket.
29	PM	3.2Ω	180000	Mod. P5-V		
	CONE DIA.	VC DIA.				
30	4-5/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

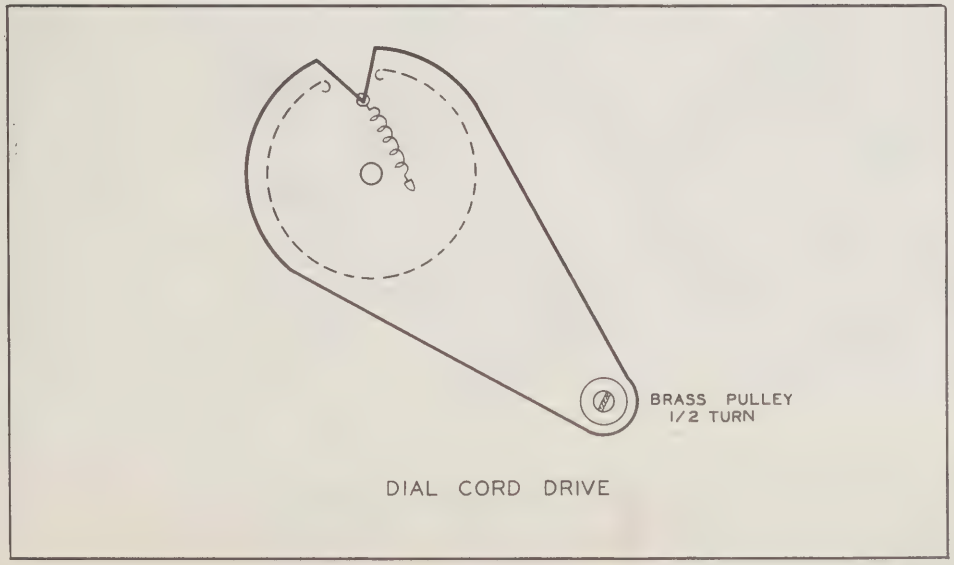
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	MEISSNER PART No.	
31	Loop Ant.	.1Ω	2.8Ω	700000		
32	Osc. Coil	.5Ω	5.5Ω	716010	14-1040	Add 50MMFD from grid to high side tuning cap.
33	Input IF	28Ω	18Ω	720000	16-6666	
34	Output IF	23Ω	22Ω	720100	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: EMERSON PART No.		INSTALLATION NOTES
35	Bayonet	6-8	0.15	Brown	807000		Type 47

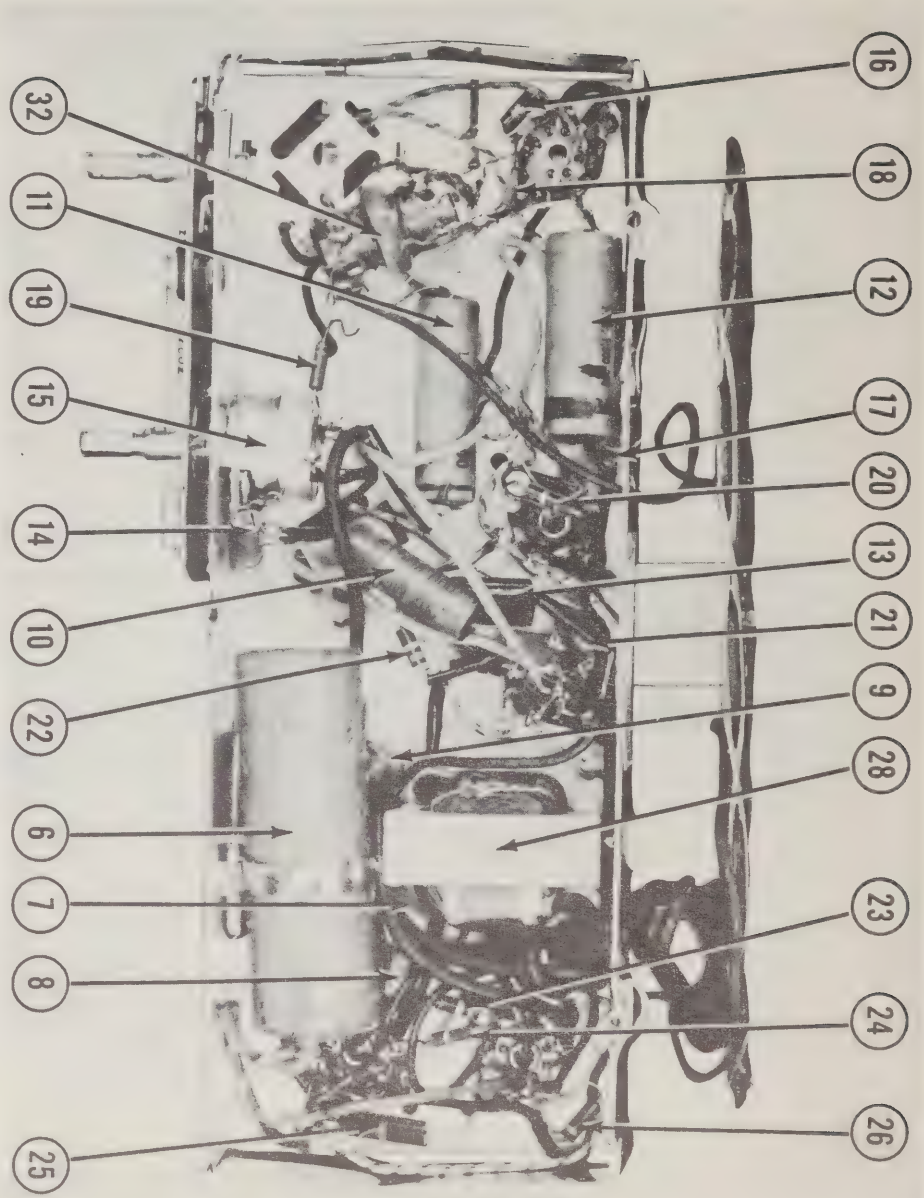
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
36	Tuning Capacitor	900013	28-390 MMF, 32-213 MMF

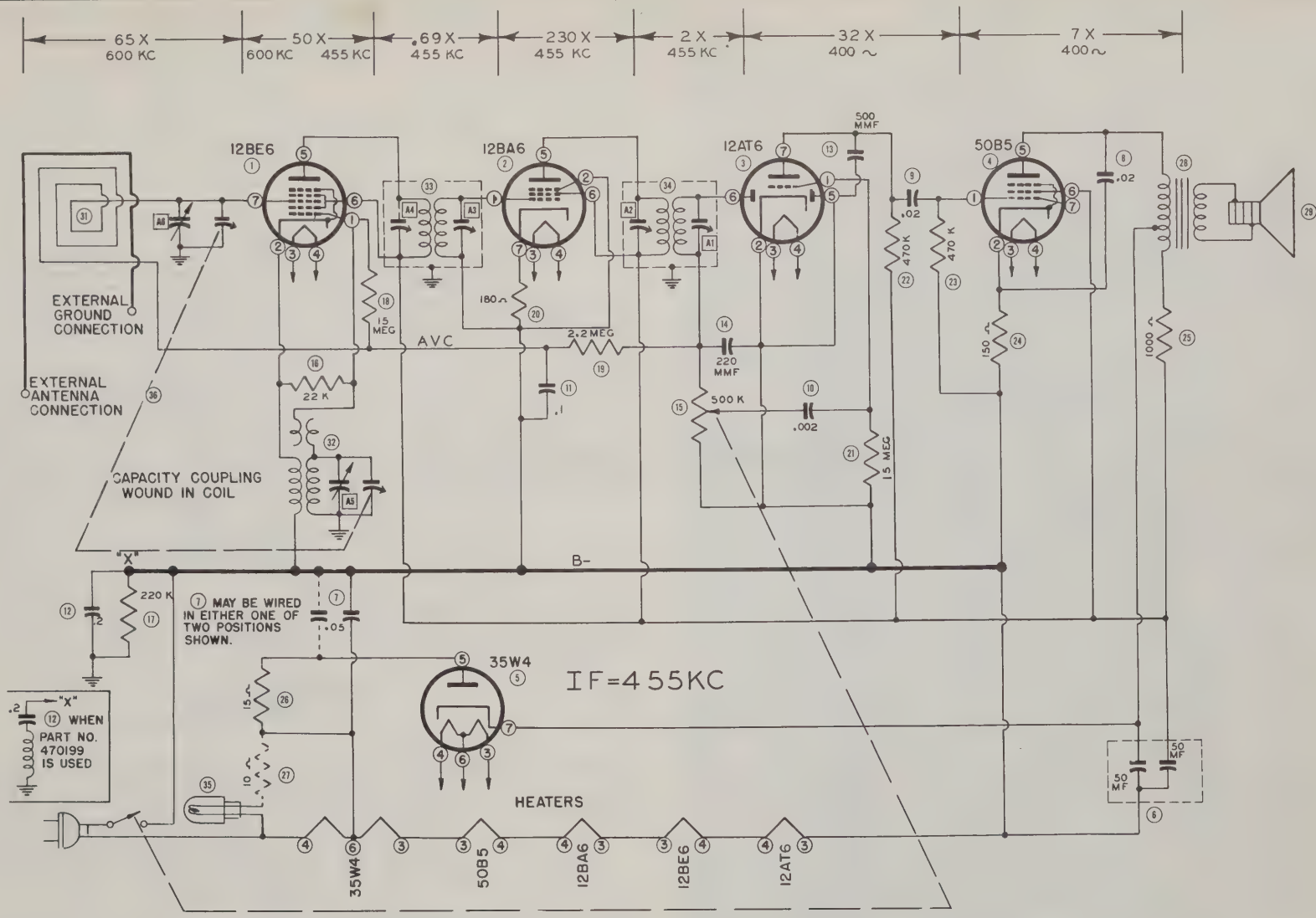


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODELS 543, 544



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	-5.7V.DC	0V.	24V.AC	12V.AC	95V.DC	95V.DC	-1V.DC
2	12BA6	0V.	0V.	24V.AC	36V.AC	95V.DC	95V.DC	1.7V.DC
3	12AT6	-55V.DC	0V.	0V.	12V.AC	0V.	-35V.DC	43V.DC
4	50B5	0V.	5.6V.DC	89V.AC	36V.AC	112V.DC	95V.DC	0V.
5	35W4	118V.DC	0V.	89V.AC	117V.AC	112V.AC	113V.AC	120V.DC

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RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	22 K Ω	.5 Ω	22 Ω	11 Ω	50 K Ω	50 K Ω	2 MEG.
2	12BA6	20 Ω	0 Ω	22 Ω	32 Ω	50 K Ω	50 K Ω	160 Ω
3	12AT6	15 MEG.	0 Ω	0 Ω	11 Ω	0 Ω	500 K Ω	520 K Ω
4	50B5	410 K Ω	125 Ω	76 Ω	32 Ω	50 K Ω	50 K Ω	410 K Ω
5	35W4	50 K Ω	0 Ω	76 Ω	101 Ω	110 Ω	99 Ω	50 K Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

479-30

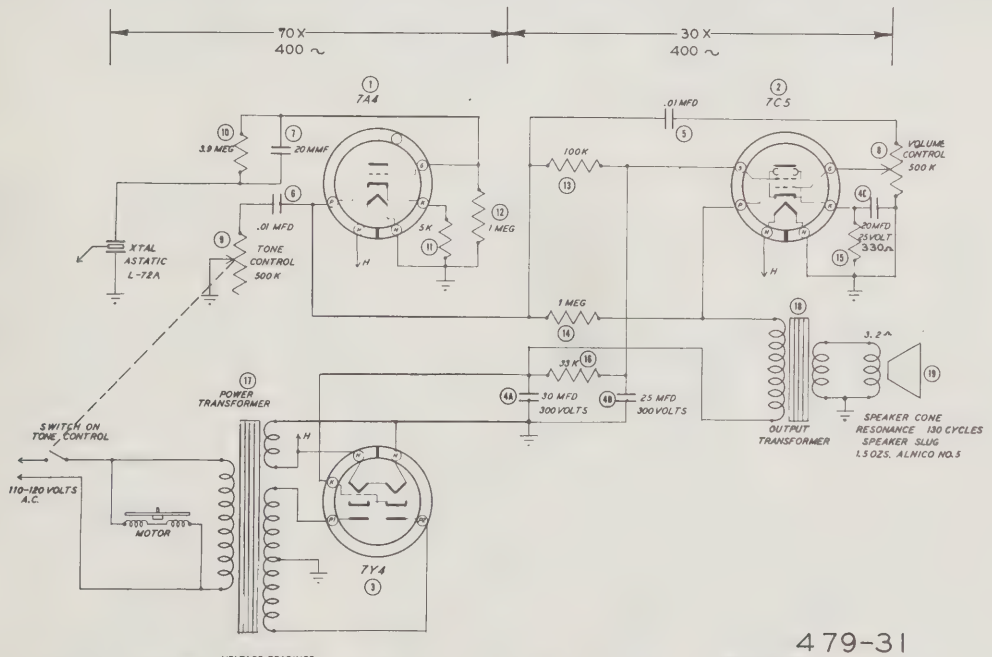
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

STEELMAN
MODEL 303

STEELMAN MODEL 303

TRADE NAME	Steelman, Model 303
MANUFACTURER	Steelman Radio Corp., 742 E. Tremont Ave., Bronx 57, N.Y.
TYPE SET	AC Operated Phonograph with 3 Tube Amplifier & Speaker
TUBES (THREE)	Types, 7A4 AF Amp., 7C5 Power Output, 7Y4 Rectifier.
POWER SUPPLY	110-120 Volts AC RATING .320 Amp. @ 117 Volts AC



479-31

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A4	0V.	143VDC	0V.	0V.	0V.	0V.	6.5VDC	6.4VAC
2	7C5	0V.	348VDC	250VDC	0V.	143VDC	0V.	13VDC	6.4VAC
3	7Y4	0V.	0V.	310VAC	0V.	0V.	310VAC	368VDC	6.4VAC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A4	0Ω	200KΩ	INF.	4.5MEG	INF.	1MEG.	5 KΩ	0 Ω
2	7C5	0Ω	110KΩ	110 KΩ	490KΩ	200KΩ	500 KΩ	275Ω	0 Ω
3	7Y4	0Ω	INF.	305Ω	INF.	INF.	350Ω	110 KΩ	0 Ω

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RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: STEELMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF Amp.	7A4	7A4	5AC	
2	Power Output	7C5	7C5	6AA	
3	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: STEELMAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	30	300				FP331	DY-313	EL-323	■ Filter
B	25	300							▲ "
C	20	25							Cath. Bypass
5	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
6	.01	400		484-01	DT4S1	TP421	S-4-01	TC-11	Tone Compensation
7	20	500		1468-00002	5W5Q2	MC215	MO.5-425	1FM-425	" "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEELMAN PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
8A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 8A per instructions
9A	500KΩ	1		MR48	D13-133	M-60-Z	Tone Control
B	Shaft			Not Req.	A	Not Req.	Attach to 9A per instructions
C	Switch			M26	41	SW-A	" " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: STEELMAN PART No.	IRC PART No.	IDENTIFICATION CODES
10	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. Tone Compensation
11	5KΩ	½		BTS-4700	Grn.-Blk.-Red AF Cathode
12	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AF Grid
13	100KΩ	½		BTS-100K	Br.-Blk.-Yl. AF Plate Load
14	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Feedback
15	3302	1		BW-1-330	Or.-Or.-Br. Output Cathode
16	33KΩ	½		BTS-33K	Or.-Or.-Or.-Filter

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: STEELMAN PART No.	STANCOR PART No.	THORDARSON PART No.	
17	117V AC @ .32A	620V CT @ .044A	6.4V AC @ 1.2A			P-6119	T22R02	

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: STEELMAN PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
18	6200Ω	3.5Ω	370Ω	.5Ω		A-3878	T22S47		

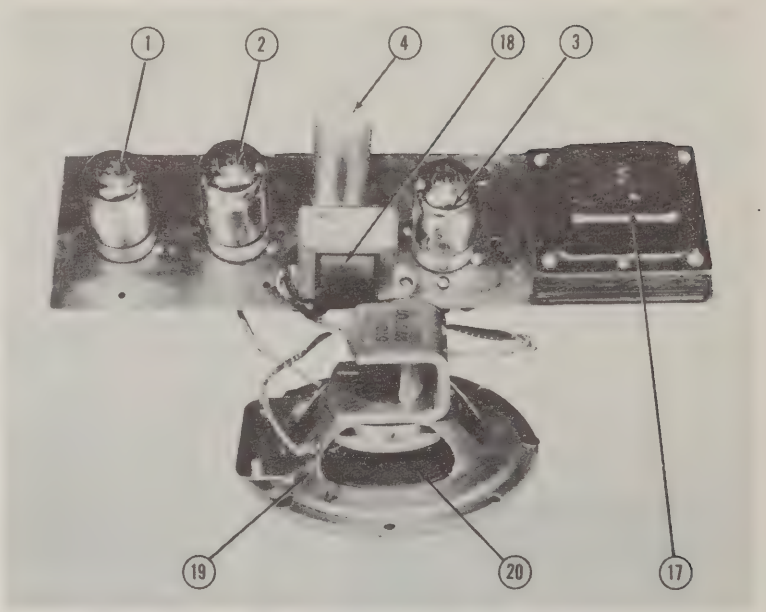
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: STEELMAN PART No.	JENSEN PART No.		INSTALLATION NOTES
19	FIELD	VC IMP.	SPEAKER HAS SPECIAL CHARACTERISTICS-ORDER FROM MANUFACTURER			
	PM	3.5Ω				
20	CONE DIA.	VC DIA.				
	4-3/4"	1/2"				

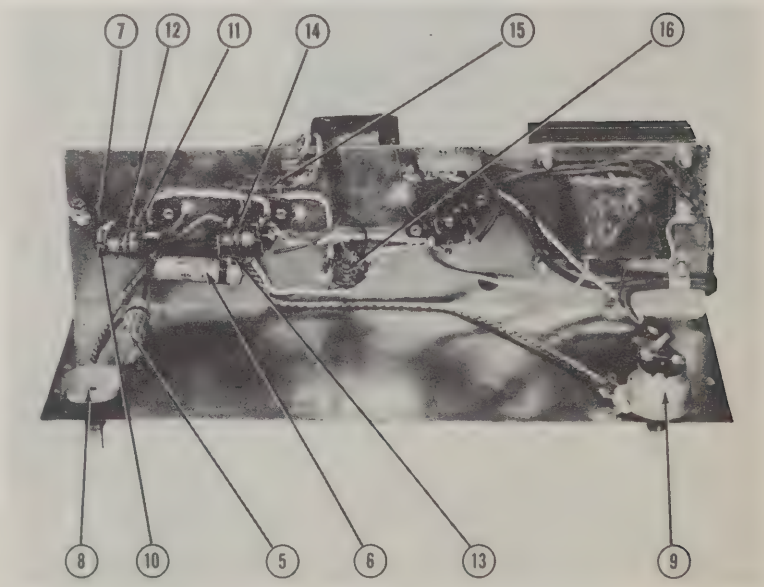
MISCELLANEOUS

ITEM No.	PART NAME	STEELMAN PART No.	NOTES
	Pickup Crystal		Astatic Type L-72A

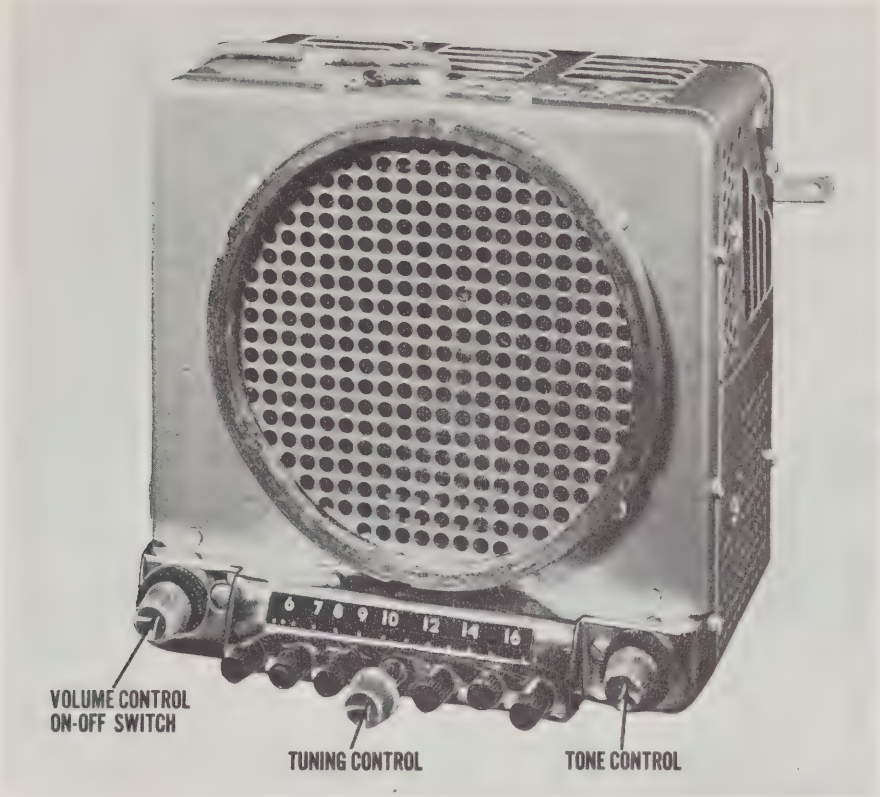
CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



STUDEBAKER (PHILCO)
MODELS S-4626, S-4627



STUDEBAKER (PHILCO)
MODELS S-4626, S-4627

STUDEBAKER MODEL S-4627

TRADE NAME	Studebaker (Philco), Models S-4626, S-4627
SUPPLIER	Studebaker Corp., South Bend, Indiana
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne with Pushbutton Tuning
TUBES (EIGHT)	Types, 7A7 RF Amp., 7B8 Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, 7A4 Phase Inverter, (2) 7C5 Power Output, 7Y4 Rectifier.
POWER SUPPLY	6 Volt Storage Battery
TUNING RANGE—BROADCAST	540-1600KC RATING 7.8 Amp. @ 6.3 Volts DC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning slugs in completely and set pointer to last reference mark at low frequency end of dial. Sensitivity control should be at maximum. Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. After receiver is installed in car adjust A7 for maximum volume on a weak station near 1400KC.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.05 MFD.	High side to ant. connector. Low side to chassis.	265KC	Tuning slugs in.	Across voice coil	A1,A2, A3,A4.	Short Pin 4 of 7B8 to chassis. Adjust for maximum output in order given. Repeat adjustments and remove short from Pin 4 of 7B8.
2	Connect 30MMFD from ant. connector to chassis.	High side through 20MMFD to ant. connector. Low side to chassis.	1600KC	1600KC	"	A5	Adjust for maximum output.
3	"	"	1400KC	Tune for maximum output.	"	A6, A7	" " " "
4	"	"	580KC	"	"	A8	Rock tuning slugs and adjust for maximum output. Repeat Steps 2, 3, 4 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PHILCO STUDEBAKER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7B8	7B8	8X	
3	IF Amp.	7A7	7A7	8V	
4	Det.-AVC-AF	7B6	7B6	8W	
5	Phase Inverter	7A4	7A4	5AC	
6	Power Output	7C5	7C5	6AA	
7	Power Output	7C5	7C5	6AA	
8	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

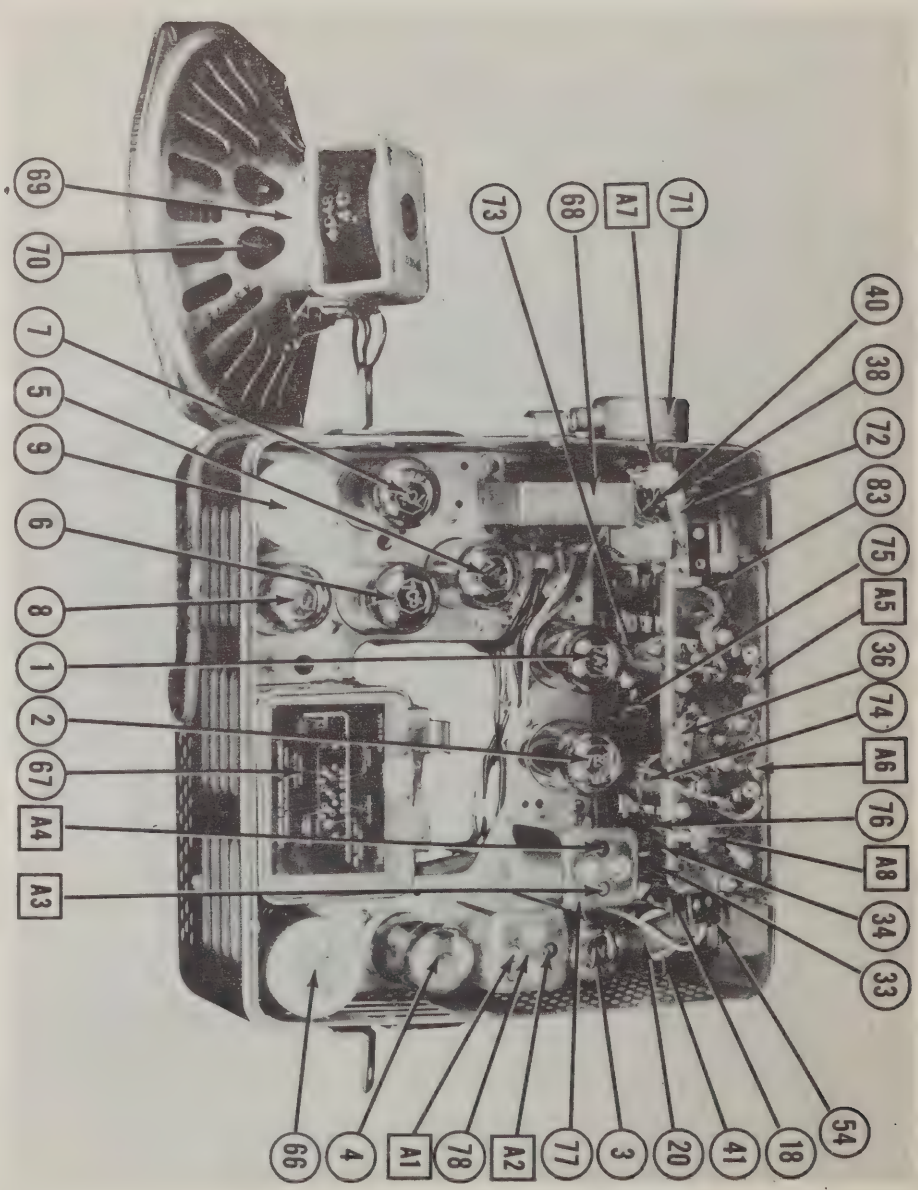
ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PHILCO STUDEBAKER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	20	350	61-0150		UP9DJ50	FP424	DY-404	EL-415	◓ Filter
B	10	350							■ "
C	5	300							▲ "
D	10	25							Cath. Bypass
10	.5	100	61-0137	484-.5	DT4P5	TP431	S-4-5	TC-5	Hash Filter
11	.5	100	61-0137	484-.5	DT4P5	TP431	S-4-5	TC-5	" "
12	.5	100	61-0137	484-.5	DT4P5	TP431	S-4-5	TC-5	" "
13	.005	1600	61-0153	1468-005	TVC16D5	OT371	TM-16-005	TR-25	Buffer
14	.01	1200	61-0124	1468-01	TVC10S1	TP434	TM-10-01	TR-11	Output Plate Bypass
15	.05	600	61-0170	684-05	DT6S5	TP415	TM-6-05	TC-15	Audio Coupling
16	.05	600	61-0170	684-05	DT6S5	TP415	TM-6-05	TC-15	" "
17	.004	1000	61-0129	1084-004	MD16D4	TP458	TM-10-004	TR-24	" "
18	.07	100	61-0152						Tone Compensation
19	.008	600	61-0174	684-008					" "
20	.25	100	61-0125	484-.25	DT4P25	TP430	S-4-25	TC-2	Audio Cath. Bypass
21	.01	400	61-0120	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
22	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	Screen Bypass
23	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	IF Cath. Bypass
24	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
25	.1	400	61-0113	484-.1	DT4P1	TP428	S-4-1	TC-1	RF Bypass Pwr. Supp.
26	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	Conv. Cath. Bypass
27	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	RF Cath. Bypass
28	.05	200	61-0122	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
29	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Hash Filter
30	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	" "
31	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	" "
32	250	500	6010245307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Osc. Anode Coupling
33	54.5		61-0149						Fixed Trimmer Cer.
34	215	500	30-1220-4						" "
35	100	500	6010105407	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Osc. Grid Capacitor
36	100	500	6010105407	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Fixed Padder
37	250	500	601024307	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	RF Coupling
38	10	500	6000105407	1468-00001	5W5Q1	MC215	MO.5-41	1FM-41	Fixed Trimmer
39	100	500	6010105407	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	Audio Plate Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO STUDEBAKER PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
40A	350KΩ	1	33-5522		D13-132		Volume Control
B	Shaft		Not Req.		N		Attach to 40A per instructions
C	Switch		" "		41		" " " " " "
41	4 Meg.	1	33-5521				Tone Control-See Note
42	200 to 700Ω	1	67-0036				Sensitivity Control

Note-Some models use 12 Meg. Ω control in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
43	68Ω	½	66-1683340	BTS-680	Blue-Gray-Br. RF Cathode
44	10kΩ	½	66-4103340	BTS-10K	Br.-Blk.-Or. RF Plate Load
45	68kΩ	½	66-3683340	BTS-68K	Blue-Gray-Or. AVC Network
46	68kΩ	½	66-3683340	BTS-68k	Blue-Gray-Or. Converter Grid
47	22kΩ	½	66-3223340	BTS-22K	Red-Red-Or. Oscillator Anode Dropping
48	100kΩ	½	66-4103340	BTS-100K	Br.-Blk.-Yl. Oscillator Grid
49	180Ω	½	66-1183340	BW-½-180	Br.-Grn.-Br. IF Cathode
50	1 Meg.	½	66-5103340	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
51	10 Meg.	½	66-6103340	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
52	470Ω	½	66-1473340	BTS-470	Yl.-Vi.-Br. AF Cathode
53	220kΩ	½	66-4223340	BTS-220K	Red-Red-Yl. AF Plate Load
54	2200Ω	½	66-2223340	BTS-2200	Red-Red-Red Tone Compensation
55	220kΩ	½	66-4223340	BTS-220K	Red-Red-Yl. Phase Inverter Plate Load
56	220kΩ	½	66-4223340	BTS-220K	Red-Red-Yl. Phase Inverter Cathode
57	10 Meg.	½	66-6103340	BTS-10 Meg.	Br.-Blk.-Blue Phase Inverter Grid
58	470kΩ	½	66-4473340	BTS-470K	Yl.-Vi.-Yl. Output Grid
59	470kΩ	½	66-4473340	BTS-470K	Yl.-Vi.-Yl. Output Grid
60	680Ω	1	66-1334340	BW-1-680	Or.-Or.-Br. Output Cathode
61	27kΩ	1	66-3274340	BTA-27K	Red-Vi.-Or. Screen Dropping
62	4700Ω	1	66-2474340	BTA-4700	Yl.-Vi.-Red Filter
63	1000Ω	1	66-2104340	BTA-1000	Br.-Blk.-Red "
64	100Ω	1	66-1104340	BW-1-100	Br.-Blk.-Br. Hash Suppression
65	100Ω	1	66-1104340	BW-1-100	Br.-Blk.-Br. "

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA MALLORY PART No.	REPLACEMENT DATA RADIART PART No.	INSTALLATION NOTES
66	Interrupter	6.3	115 ~	83-0026	859	5326P	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDARSON PART No.	
67	6.3V DC @ 2.0A	500V CT @ .053A			65-0358	P-4062*	T22R20*	*Drill new mounting holes.

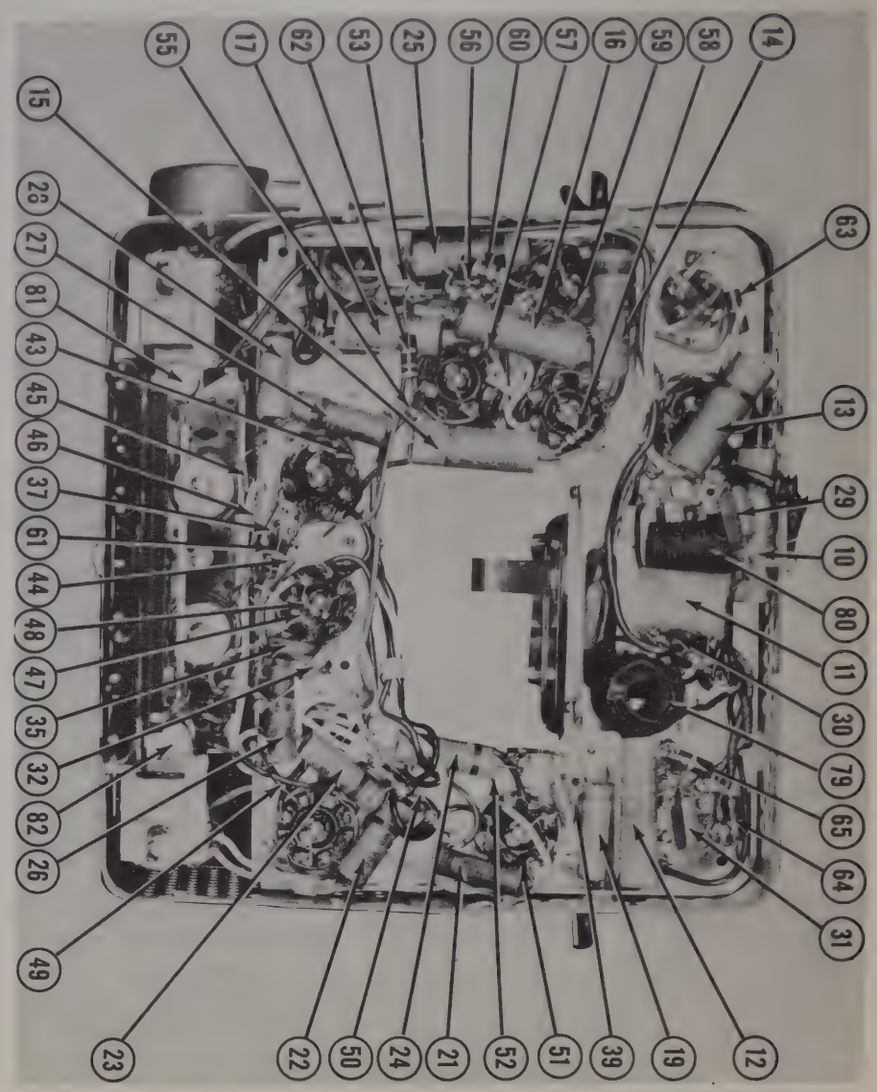
TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
68	9000Ω CT	3.1Ω	700Ω CT	.3Ω	65-0409	A-3856*	T22S47*		*Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD RES. / VC IMP.				
69A	4.6Ω / 3.1Ω	73-0072			
B		73-0053			Alternate Speaker
	CONE DIA. / VC DIA.				
70	6-7/8" / 5/8".	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA PHILCO STUDEBAKER PART No.	REPLACEMENT DATA MEISSNER PART No.	
71	Ant. Spark Coil		1.2Ω	65-0428		
72	Ant. Choke Coil		1.2Ω	65-0378		
73	Ant. Coil		12Ω	65-0349		
74	RF Coil		11.5Ω	65-0359		
75	Osc. Grid Coil		4.5Ω	65-0350		
76	Osc. Tracking Coil		12.5Ω	65-0351		
77	Input IF	53Ω	53Ω	65-0352	16-6652	
78	Output IF	60Ω		65-0410		
79	Vibrator Choke		0Ω	65-0151		
80	A. Choke		0Ω	32-1644		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA PHILCO STUDEBAKER PART No.		INSTALLATION NOTES
81	Bayonet	6.3	0.25	Blue	34-2064		Type 44
82	"	"	"	"	34-2064		

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO STUDEBAKER PART No.	NOTES
83	Tuning Assembly	76-1990	Model S-4626
	" "	77-0970	" S-4627
84	Fuse	45-2559	SFE-14
A7	Trimmer Cap.	63-0053	Model S-4626
		31-6472	" S-4627
	Dial Scale	27-5905	Model S-4626
		27-5923	" S-4627
	Pointer & Cam.	76-2079	Model S-4626
		76-2482	" S-4627

PUSHBUTTON ADJUSTMENTS

1. Turn receiver on and allow it to warm up for about fifteen minutes.
2. Push any button in completely and tune in station with knurled knob at the end of the button.
3. To set up remaining buttons follow same procedure as outlined above.

VOLTAGE READINGS

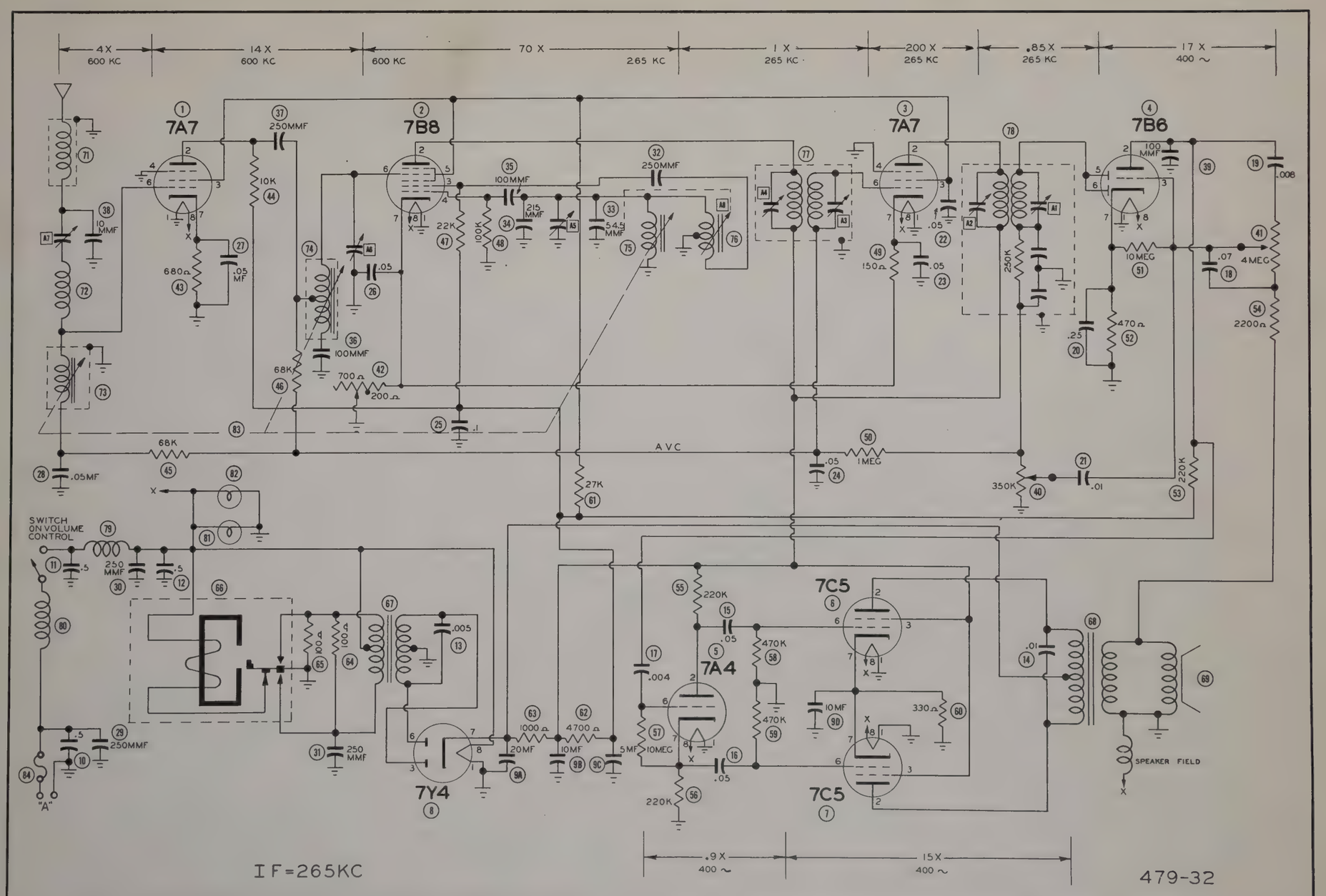
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0V.	135V.DC	75V.DC	0V.	0V.	-1V.DC	2.9V.DC	5.7V.DC
2	7B8	0V.	200V.DC	115V.DC	-2.8V.DC	75V.DC	-.1V.DC	2V.DC	5.7V.DC
3	7A7	0V.	200V.DC	75V.DC	0V.	0V.	-1V.DC	2.7V.DC	5.7V.DC
4	7B6	0V.	88V.DC	-.4V.DC	.2V.DC	-.5V.DC	-.5V.DC	.2V.DC	5.7V.DC
5	7A4	0V.	115V.DC	200V.DC	0V.	0V.	7V.DC	97V.DC	5.7V.DC
6	7C5	0V.	215V.DC	200V.DC	0V.	0V.	0V.	13V.DC	5.7V.DC
7	7C5	0V.	215V.DC	200V.DC	0V.	0V.	0V.	13V.DC	5.7V.DC
8	7Y4	0V.	0V.	250VAC	0V.	0V.	250VAC	220V.DC	5.7V.DC

RESISTANCE READINGS

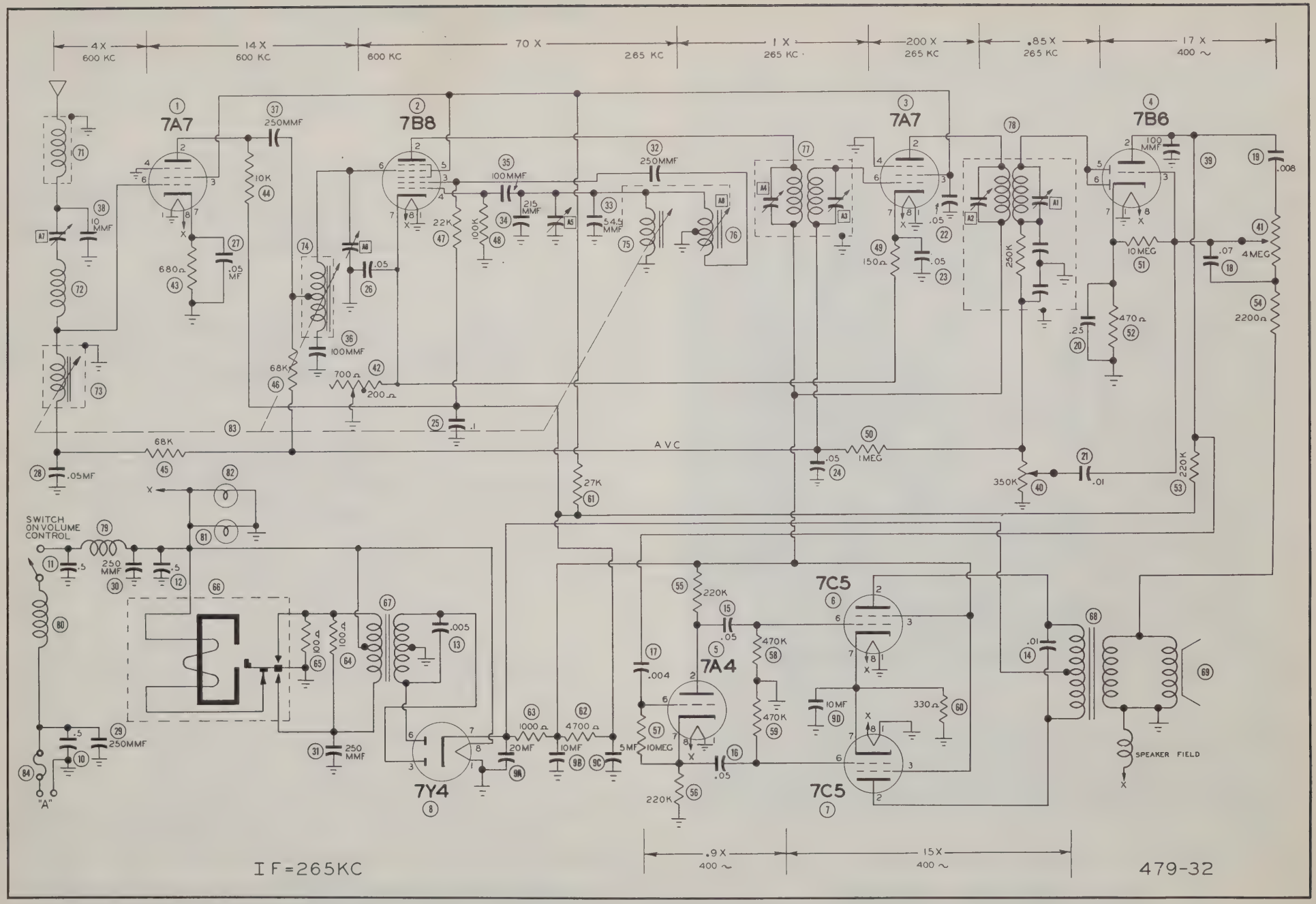
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	0Ω	130KΩ	150KΩ	0Ω	0Ω	1.3MEG.	650Ω	.1Ω
2	7B8	0Ω	120KΩ	150KΩ	90KΩ	150KΩ	1.3MEG.	180Ω	.1Ω
3	7A7	0Ω	120KΩ	150KΩ	0Ω	0Ω	1.2MEG.	320Ω	.1Ω
4	7B6	0Ω	340KΩ	10MEG.	380Ω	280KΩ	280KΩ	460Ω	.1Ω
5	7A4	0Ω	340KΩ	120KΩ	INF.	INF.	10MEG.	210KΩ	.1Ω
6	7C5	0Ω	120KΩ	120KΩ	INF.	INF.	460KΩ	300Ω	.1Ω
7	7C5	0Ω	120KΩ	120KΩ	INF.	INF.	440KΩ	300Ω	.1Ω
8	7Y4	0Ω	INF.	250Ω	INF.	INF.	230Ω	120KΩ	.1Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6.3 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



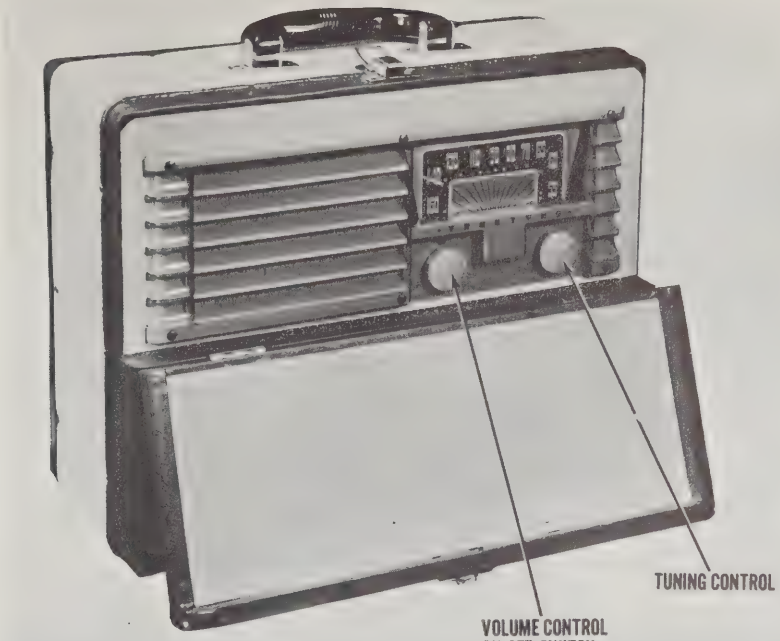
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

TRUETONE
MODELS D3630, D3630N
(BATTERY OPERATED)

TRUETONE
MODELS D3630, D3630N
(BATTERY OPERATED)



TRUETONE
MODELS D3630, D3630N
(BATTERY OPERATED)

TRUETONE MODEL D3630

TRADE NAME	Truetone, Models D3630, D3630N
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	Three Power Portable Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output.
POWER SUPPLY RATING	105-125 Volts AC-DC or 9 Volts "A" Supply & 90 Volts "B" Supply in Pack Form .150 Amp. @ 117 Volts AC or 55MA @ 9 Volts DC & 15MA @ 94 Volts DC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

In Steps 1-3 while receiver is out of cabinet a 50KΩ resistor should be connected across loop lead clips at rear of tuning cap. To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low freq. end of dial. Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a capacitor in series with the low side of the signal generator and B-. Volume should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to grid cap. of 1A7. Low side to B-.	455KC	Tuning cap. open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy ant. to 200 MMF to reduce hum modulation.
2	.1 MFD.	High side to grid cap. 1N5 (RF Amp. Tube). Low side to chassis.	1620KC	Tuning cap. fully open.	"	A5	"
3	.1 MFD.	"	1400KC	Tune for maximum output.	"	A6	" Replace receiver in cabinet.
4	250MMFD	High side to ext. ant. lead. Low side to ext. ground lead.	1400KC	"	"	A7	Adjust for maximum output.
	If receiver does not have an adjustable loop loading coil disregard Steps 5 & 6.						
5	250MMFD	High side to ext. ant. leads. Low side to ext. ground lead.	600KC	Tune for maximum output.	"	A8	Adjust for maximum output. Seal A8 adjustment with some quick drying cement.
6	250MMFD	"	1400KC	"	"	A7	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. **Indianapolis Indiana**

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		TRUETONE PART No.	STANDARD REPLACEMENT		
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SOLAR PART No.	SPRAGUE PART No.	
6A	30	150	67C7-42	AF106D20A	UP6CJ62	FP309	DY-304	EL-351	■ Filter
B	50	150							▲ "
C	100	25							Filament Bypass
7	.05	400	64B1-22	484-05	DT4S5	TP426	S-4-05	TC-15	Line Filter
8	.2	400	64A2-1	484-.2	DT4P2	TP429	S-4-2	TC-2	Line Isolation
9	.002	600	64B1-14	684-002	DT6D2	TP405	S-6-002	TC-22	Output Plate Bypass
10	.01	400	64B1-25	484-01	DT4S1	TP421	S-4-01	TC-11	Audio Coupling
11	.01	400	64B1-25	484-01	DT4S1	TP421	S-4-01	TC-11	" "
12	.01	400	64B1-25	484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
13	.01	400	64B1-25	484-01	DT4S1	TP421	S-4-01	TC-11	Conv. Screen Bypass
14	.01	400	64B1-25	484-01	DT4S1	TP421	S-4-01	TC-11	AVC Filter
15	.25	200	64B1-28	484-.25	DT4P25	TP430	S-4-25	TC-2	Filament Bypass
16	.05	200	64B1-32	484-05	DT4S5	TP426	S-4-05	TC-15	AVC Filter
17	250	500	65B5-22	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	Audio Plate Bypass
18	100	500	65B7-17	1468-0001	5W5T1	MC235	MO.5-31	1FM-31	IF Bypass Vol. Cont.*
19	150	500	65B5-3	1468-00015	5W5T15	MC236	MO.5-315	1FM-315	Fixed Trimmer
20	50	500	65B5-11	1468-00005	5W5Q5	MC225	MO.5-45	1FM-45	Osc. Grid Capacitor
21	250	500	65B5-22	1468-00025	5W5T25	MC240	MO.5-325	1FM-325	RF Coupling
22	420	500	65B1-13						Fixed Trimmer
23	200	500	65B7-22	1468-0002	5W5T2	MC237	MO.5-32	1FM-32	RF Coupling

*Not used in all models.

CONTROLS

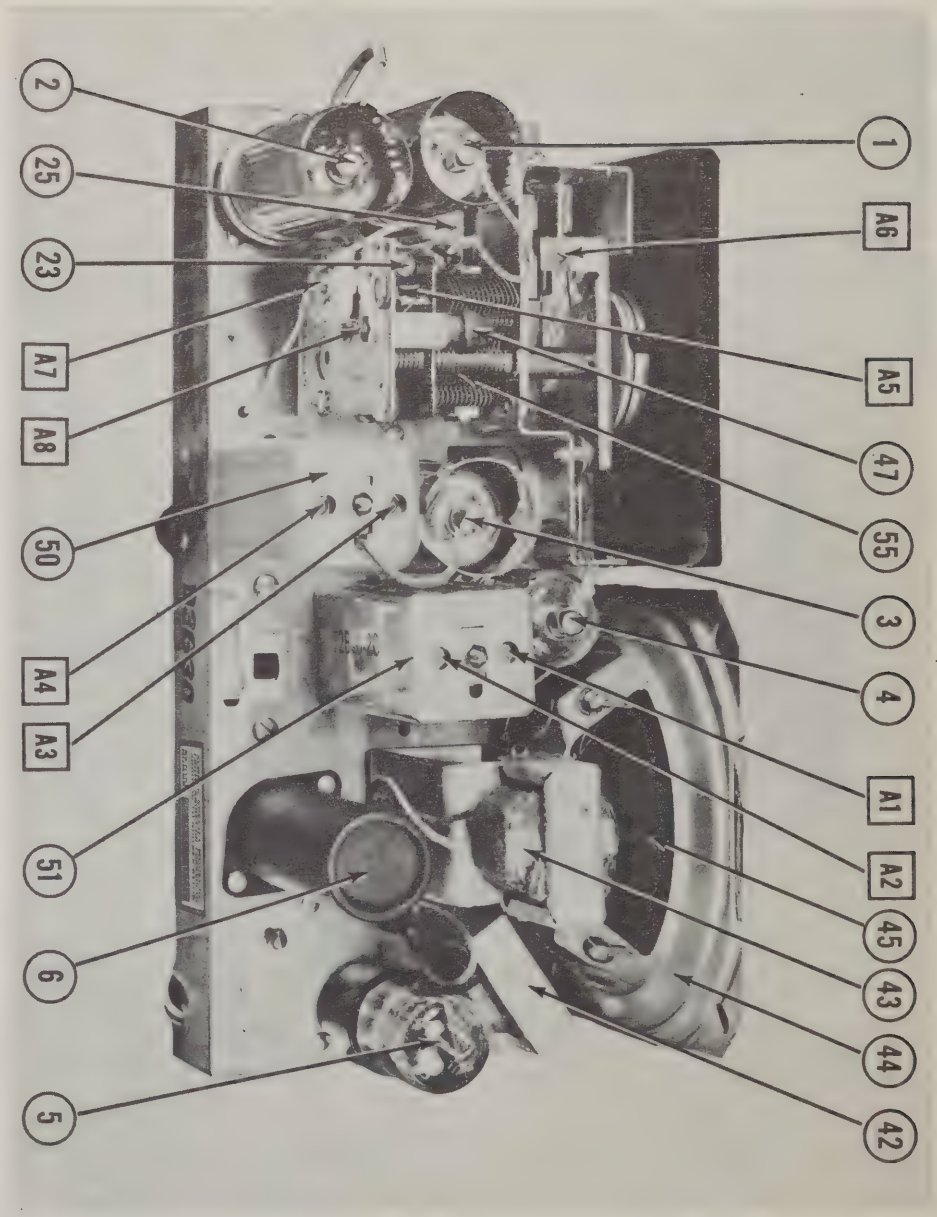
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
24A	1 Meg.	1	75B1-10C	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 24A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	TRUETONE PART No.	IRC PART No.	
25	1 Meg.	½	60B2-105	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid
26	100KΩ	½	60B8-104	BTS-100K	Br.-Blk.-Yl. Converter Grid
27	220KΩ	½	60B8-224	BTS-220K	Red-Red-Yl. Oscillator Grid
28	47KΩ	½	60B8-473	BTS-47K	Yl.-Vi.-Or. Converter Screen Dropping
29	4.7 Meg.	½	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. AVC Network
30	4.7 Meg.	½	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
31	3.3 Meg.	½	60B2-335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network - See Note 1
32	4.7 Meg.	½	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
33	15 Meg.	½	60B2-156	BTS-15 Meg.	Br.-Grn.-Blue AF Grid
34	1 Meg.	½	60B2-105	BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
35	2.2 Meg.	½	60B2-225	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
36	47Ω	1	60B28-9	BW-1-47	Yl.-Vi.-Blk. Surge Limiter-See Note 2
37	1500Ω	½	60B8-152	BTS-1500	Br.-Grn.-Red Filament String
38	560Ω	½	60B8-561	BTS-560	Grn.-Blue-Br. "
39	220Ω	½	60B8-221	BW-½-220	Red-Red-Br. Filament String
40	120Ω	½	60B8-121	BW-½-120	Br.-Red-Br. " "
41	2275Ω	5	61A3-6		" "

Note 1 - Some models use 4.7 Meg. in this application.
Note 2 - Some models use 68Ω in this application. IRC replacement BW-1-68.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE @ CURRENT 1000~	REPLACEMENT DATA: TRUETONE PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
42A	.067A	319Ω	3.6 Henries	74A1	C-1711	T20C52	
B				74A5			Alternate Choke

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
43	9650Ω	2.3Ω	750Ω	.82Ω	Part of 78B8.	A-3822 ‡	T22S47 ‡		‡ Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA:	INSTALLATION NOTES
	FIELD	VC IMP.		ST-107†		
44	PM	2.3Ω	78B8	Mod. P5-V		†Drill and tap magnet frame.
	CONE DIA.	VC DIA.				
45	5-1/8"	5/8"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			

R F COILS

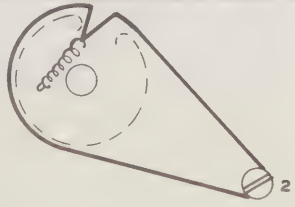
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: MEISSNER PART No.	
46	Loop Ant.	.1Ω	.8Ω			
47	Loop Loading Coil		2.5Ω	AA115 §		§ Variable; #AA114 fixed
48	RF Coil		3.8Ω	AB100-5		
49	Osc. Coil	2.5Ω	6Ω	69A7	14-1040	
50	Input IF	15Ω	15Ω	72B9-2	16-6658	
51	Output IF	13.5Ω	13.5Ω	72B10-2	16-6660	

BATTERIES

ITEM No.	VOLTAGE	TRUETONE PART No.	EVEREADY "A"	EVEREADY "B"	EVEREADY "A-B"	INSTALLATION NOTES
52	9 V. "A" 90 V."B"	Wizard B6460 or B6470			#754	

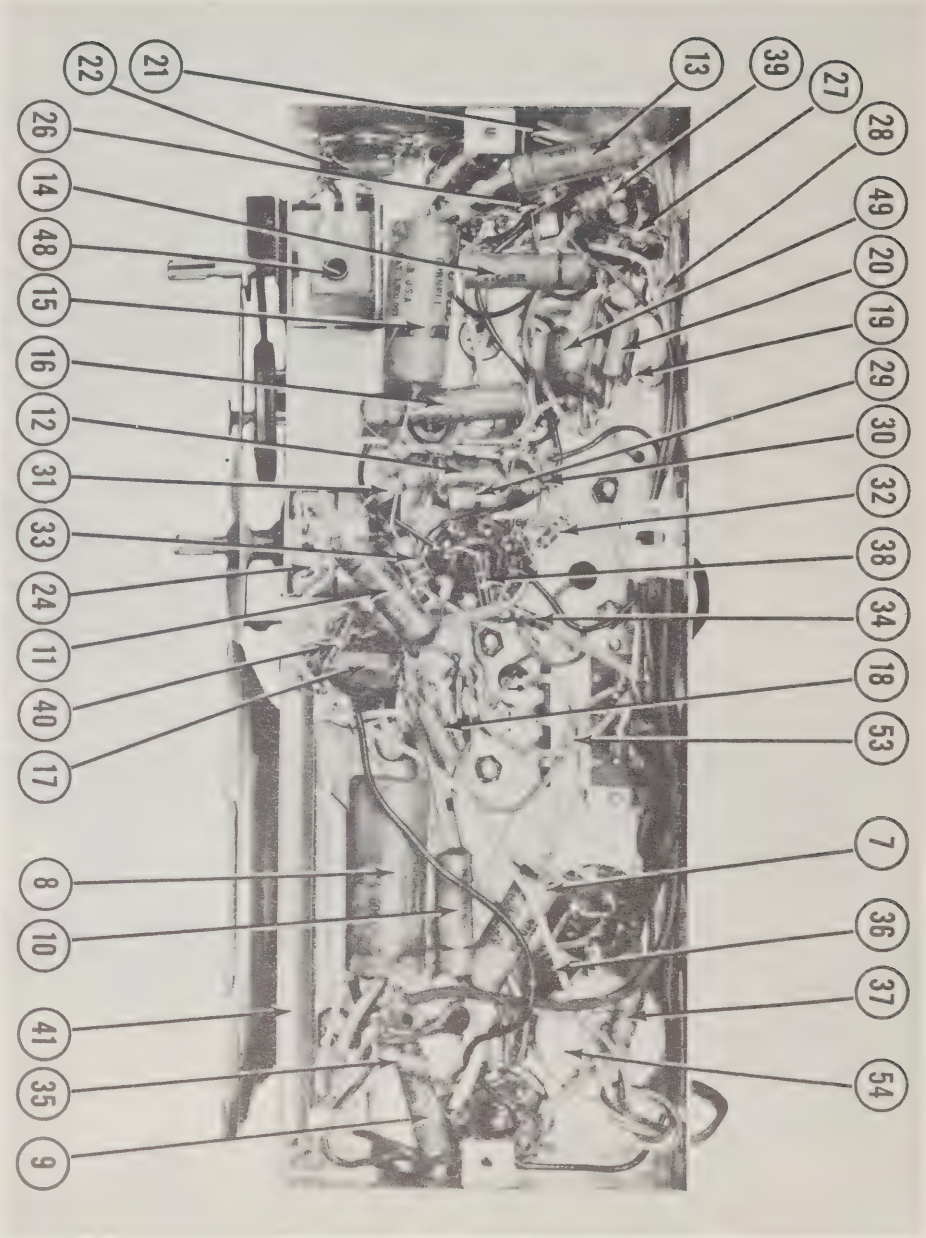
MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
53A	Switch	77A5	Power Change-Over(Model D3630)
B	"	77A10	" " " (Model D3630N)
54	Rectifier	93A1-2	Selenium
55	2 Gang Var.Cap.	68R4	13-426 MMF, 17-180 MMF
	Dial Scale	23C14	Escutcheon Included
	Pointer	25A1‡-1	



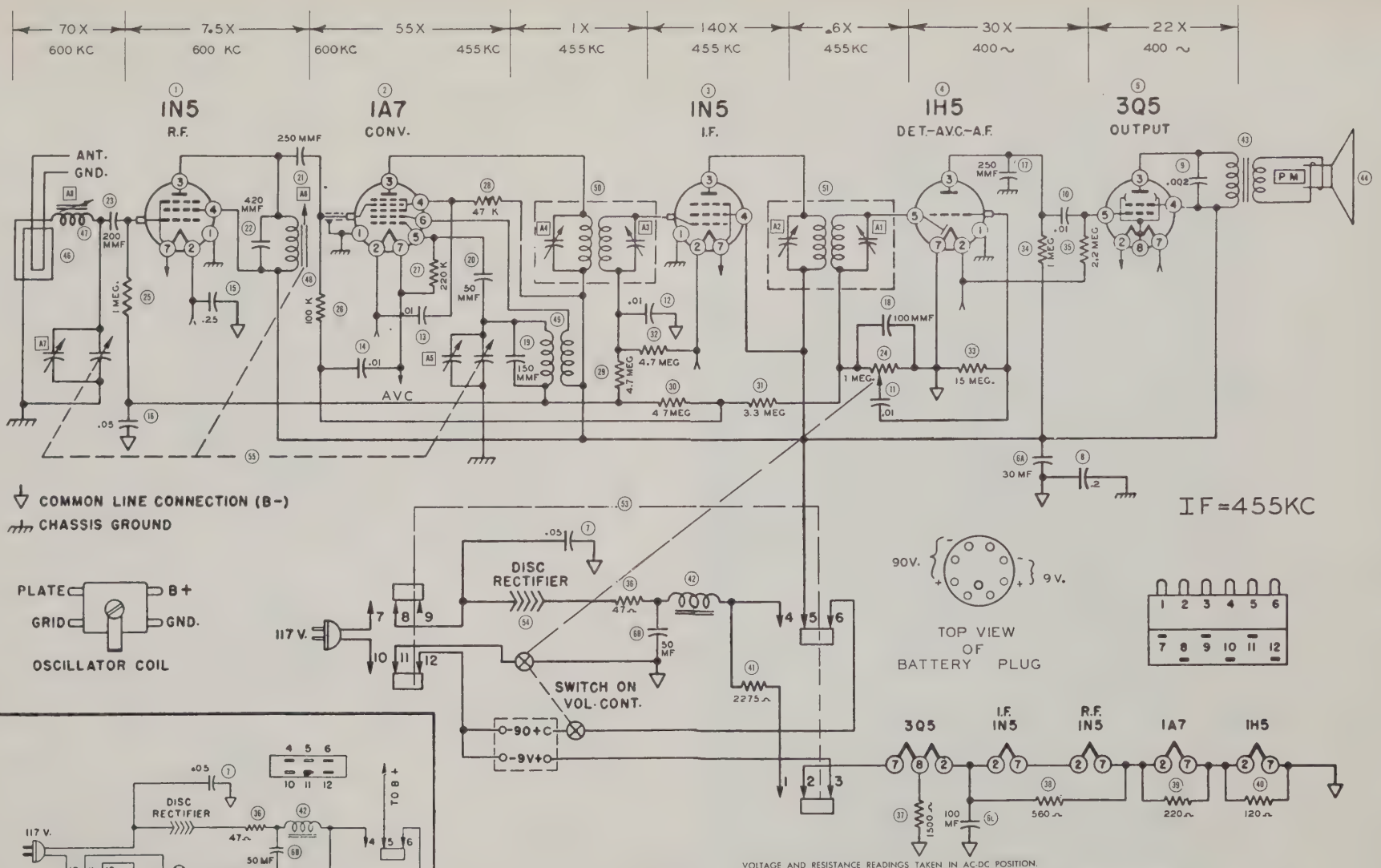
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



TRUETONE MODELS D3630, D3630N

TRUETONE MODELS D3630, D3630N



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT/G	0V.	4.1V.DC	110V.DC	110V.DC	0V.	0V.	2.8V.DC	0V.	0V.
2	1A7GT/G	0V.	2.8V.DC	110V.DC	60V.DC	25V.DC	110V.DC	35V.DC	0V.	0V.
3	1N5GT/G	0V.	5.4V.DC	110V.DC	110V.DC	0V.	2.8V.DC	4.1V.DC	0V.	0V.
4	1H5GT/G	0V.	35V.DC	65V.DC	0V.	0V.	0V.	0V.	0V.	0V.
5	3Q5GT	0V.	5.4V.DC	100V.DC	108V.DC	0V.	0V.	7.7V.DC	6.6V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT/G	INF.	*	2000Ω	2000Ω	INF.	3 MEG.	*	INF.	5 MEG.
2	1A7GT/G	INF.	*	2000Ω	50 KΩ	200 KΩ	2000Ω	*	3 MEG.	3 MEG.
3	1N5GT/G	INF.	*	2000Ω	2000Ω	15 MEG.	*	*	INF.	3 MEG.
4	1H5GT/G	INF.	*	1 MEG.	1 MEG.	1 MEG.	0Ω	0Ω	INF.	15 MEG.
5	3Q5GT	INF.	*	280Ω	200Ω	2 MEG.	INF.	*	*	

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

479-33

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. The two outside terminals of the volume control are shorted together during stage gain measurements.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

TOP VIEW

GENERAL INFORMATION

The model 46A is a single-post changer designed to play up to twelve 12-inch or fourteen 10-inch records at a single loading. The last record will be repeated until the changer is turned off. Power supply is 115 volts at 60 cycles.

Manufactured by AERO METAL PRODUCTS CORP., 2704 WEST ARTHINGTON, CHICAGO, ILLINOIS

THIS RECORD CHANGER HAS BEEN USED IN POSTWAR PRODUCTION BY THE FOLLOWING MANUFACTURERS:

National Acoustic Products, 120 North Green Street, Chicago, Illinois
Majestic Radio & Television Corporation, Elgin, Illinois
Hoffman Radio Corporation, 3761 South Hill Street, Los Angeles, California

LOADING

For 10-inch records the record shelf is moved toward the spindle. For 12-inch records, the shelf is moved back. To set the shelf, tilt it with the record support side up and move it as far as it will go in the desired direction. When setting the shelf back down in its normal position, be sure it goes all the way down. Be sure the spindle cap is down before loading the changer. Do not intermix record sizes. When the desired number of records has been placed on the spindle ledge, be sure to place the pressure clamp on top of the stack.

Do not use force to start or stop any part of the mechanism, and do not attempt to change the setting of the record shelf while the changer is in cycle.

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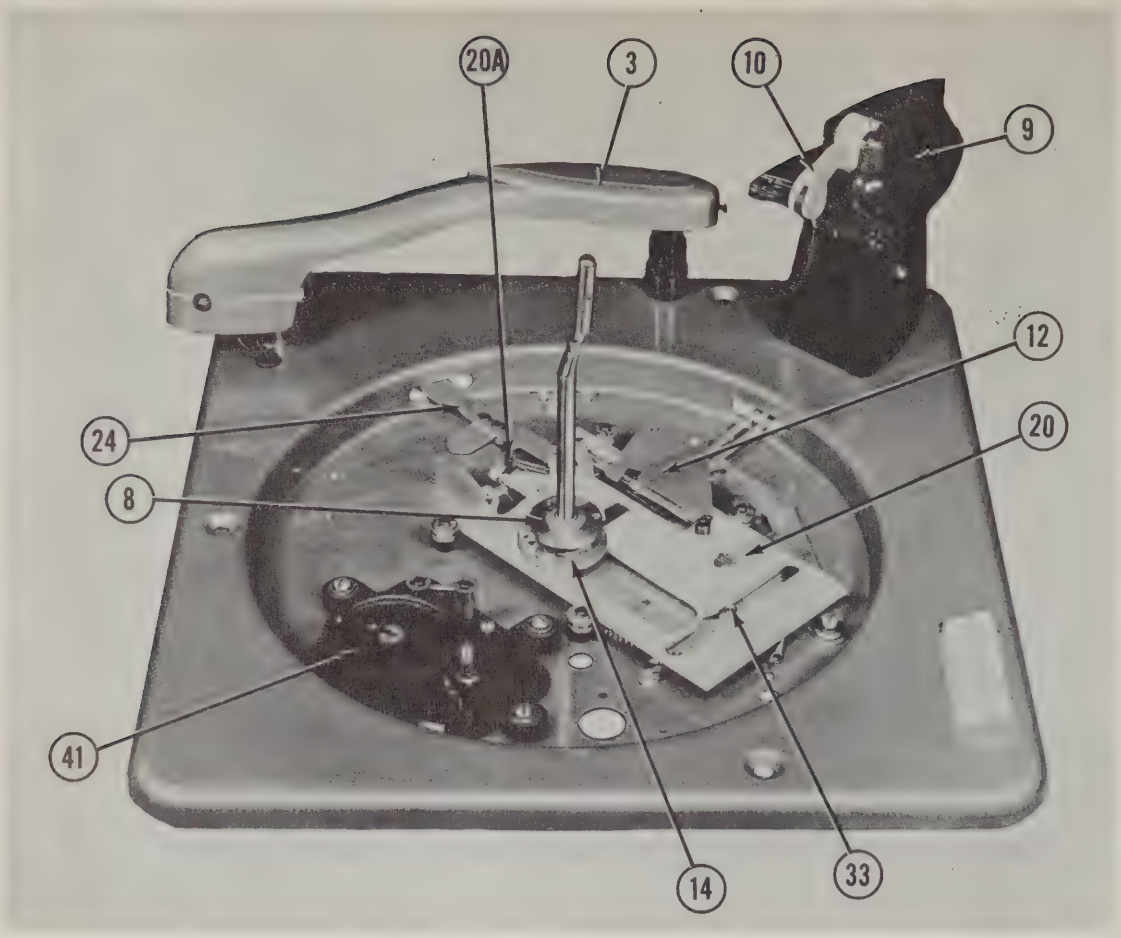
AERO RECORD CHANGER
MODEL 46A

AERO RECORD CHANGER
MODEL 46A



TOP VIEW LESS TURNTABLE

THE CHANGE CYCLE

The change cycle is started by moving the reject pawl (20A), allowing the clutch arm (13) to engage the clutch. This may be done manually by pressing the reject button, which acts through the reject link (70) and the reject arm (70A), or by allowing the pickup arm to approach within 1 15/16″ of the record center, in which case the trip attached to the tone arm link (24) engages the reject pawl (20A).

When the clutch is engaged, the pinion gear (14) turns with the turntable. This pinion gear, in turn, rotates the main gear (25).

As the main gear turns, the cam plate on its underside pushes the positioner stop (45) out clear of the tone arm link (24).

The stud (33) on the upper side of the main gear, acting in the specially shaped slot in the main slide (20), pushes the main slide backward. As the slide moves, the lift lever roller (21) pushes down on the lift lever (66), raising the tone arm off the record.

The stud on the tone arm lever (24), riding with the rectangular slot in the main slide, moves the tone arm out clear of the record stack.

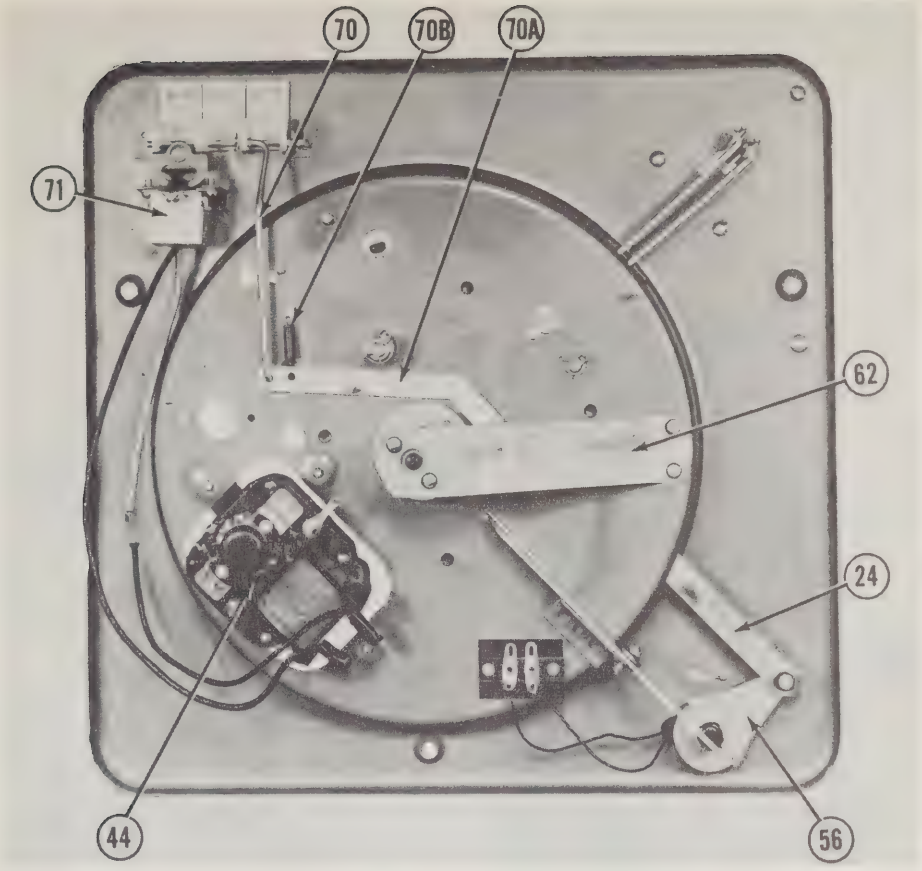
A stud (20B) on the main slide engages the push-off arm (12), moving the record shelf (9) back. This allows a record to drop to the lower ledge of the shelf. At the same time the cam on the underside of the main gear releases the positioner stop. The positioner stop now moves to a position determined by the setting of the record shelf.

The direction of the main slide now reverses. The push-off arm (12) is now moved back, bringing the record shelf back to its normal position, and dropping the bottom record to the turntable.

The spring on the return slide now engages the stud on the tone arm lever (24), moving the tone arm back toward the record. The tone arm is stopped in proper position for set down by striking the positioner stop. After the tone arm lever is stopped, the return slide slips on the main slide for the remainder of the main slide motion.

The lift lever roller now rides off the lift lever, allowing the tone arm to descend on the record. A roller on the underside of the main gear moves the positioner stop out of the way of the tone arm lever, so the tone arm will be free to move across the record.

At the end of the change cycle, the reject pawl (20A) catches the clutch arm (13), pulling it away from the clutch and thus disengaging the pinion gear.



BOTTOM VIEW

ADJUSTMENTS

TONE ARM SET-DOWN

The point at which the needle drops on the record may be adjusted by means of a screw which is reached through a hole in the side of the tone arm near the back. The needle should set down on the record at a point 1/8 inch from the edge of the record. If the adjustment should happen to be so far off that this screw will not move the arm far enough, loosen the set screw in the tone arm mounting assembly (36) and move the tone arm while holding the tone arm lever (24) to prevent it from moving.

TONE-ARM HEIGHT

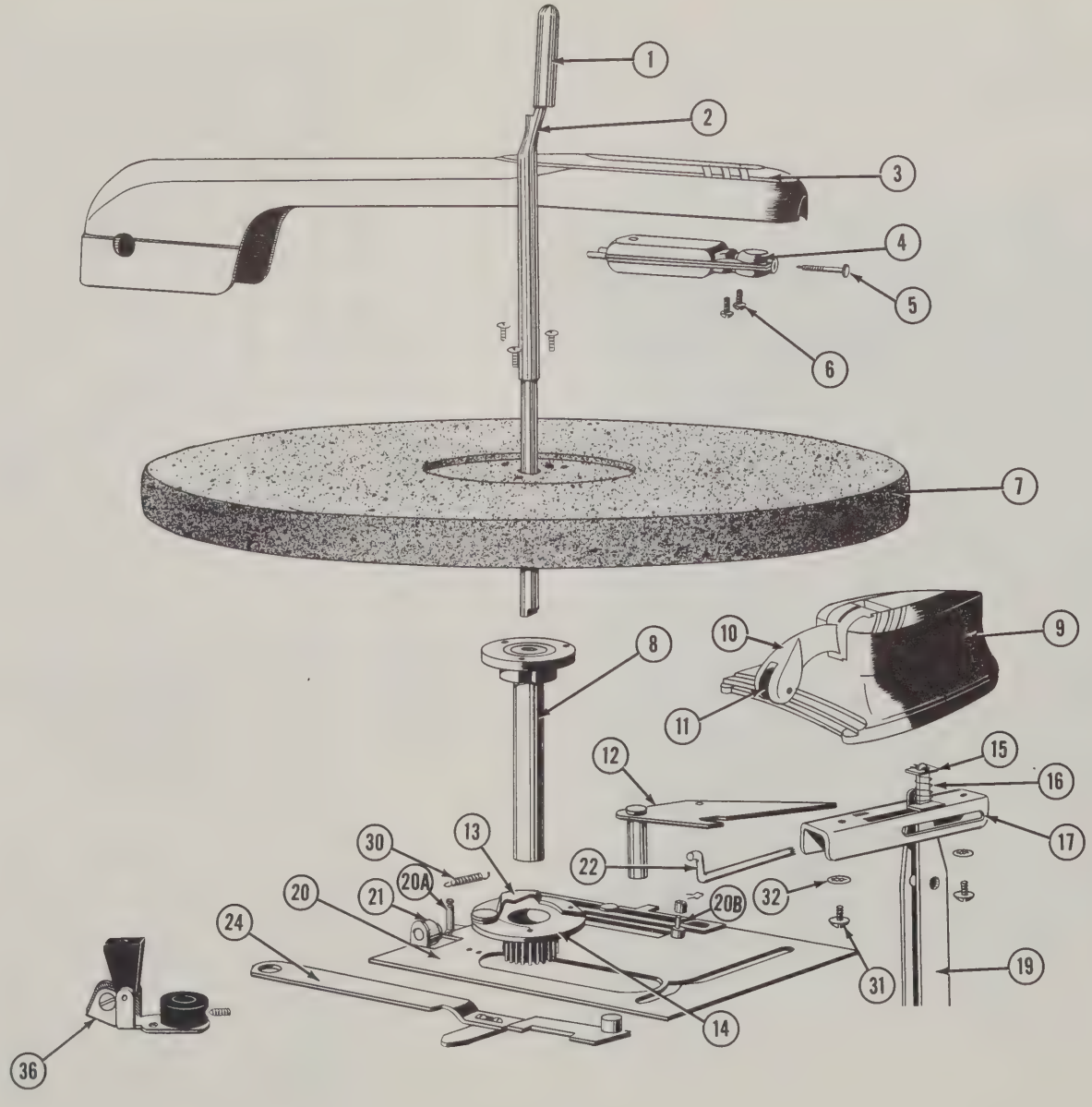
The height of the tone arm during the change cycle may be adjusted by means of the knurled head screw mounted in the underside of the tone arm. The height should be such that the arm will clear a full stack of records on the turntable. If the adjustment is too high, the arm may strike the record shelf in the 10-inch position.

PUSH-OFF HEAD

Before attempting to adjust the push-off head, be sure the center-post (2) is not bent. Loosen the three screws holding the record support base (28) to the changer base. Place a 10-inch record on the center-post so that it rests on the record shelf. Move the base (28) backward or forward to provide a clearance of 1/32 inch between the edge of the record and the back of the upper ledge of the record support shelf. Be sure to tighten the screws securely after making this adjustment.

POSITIVE TRIP

It will be necessary to remove the turntable to adjust the trip point. The trip lever is mounted on the tone arm lever (24) by means of two screws. Sliding the trip lever away from the main slide will cause the changer to trip nearer the center of a record. To make the changer trip earlier, slide the trip lever toward the main slide.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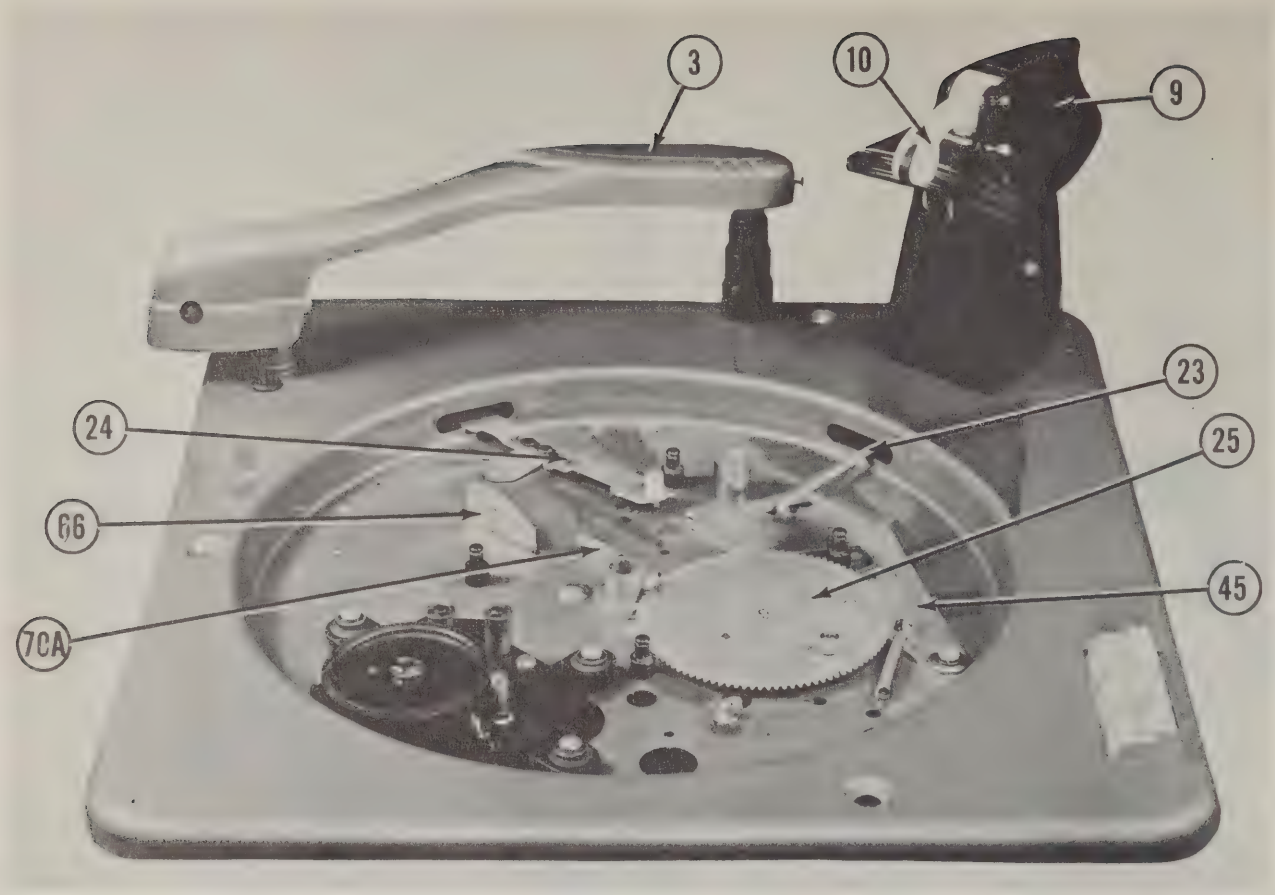


TOP VIEW LESS MAIN SLIDE

GEAR TIMING AND CLUTCH ADJUSTMENT

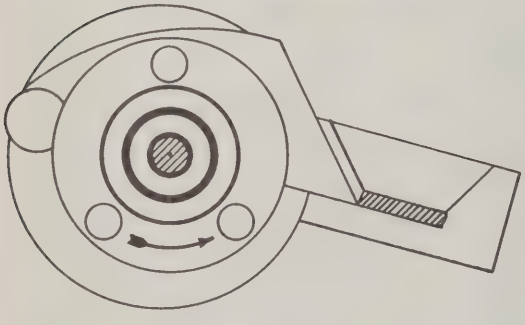


Figure 1

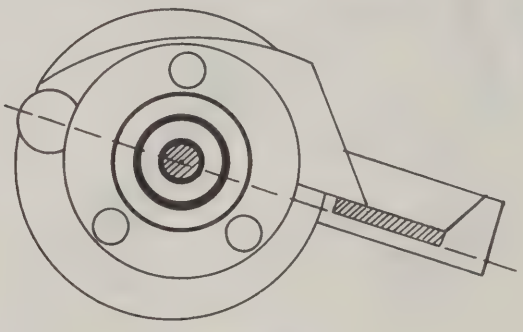


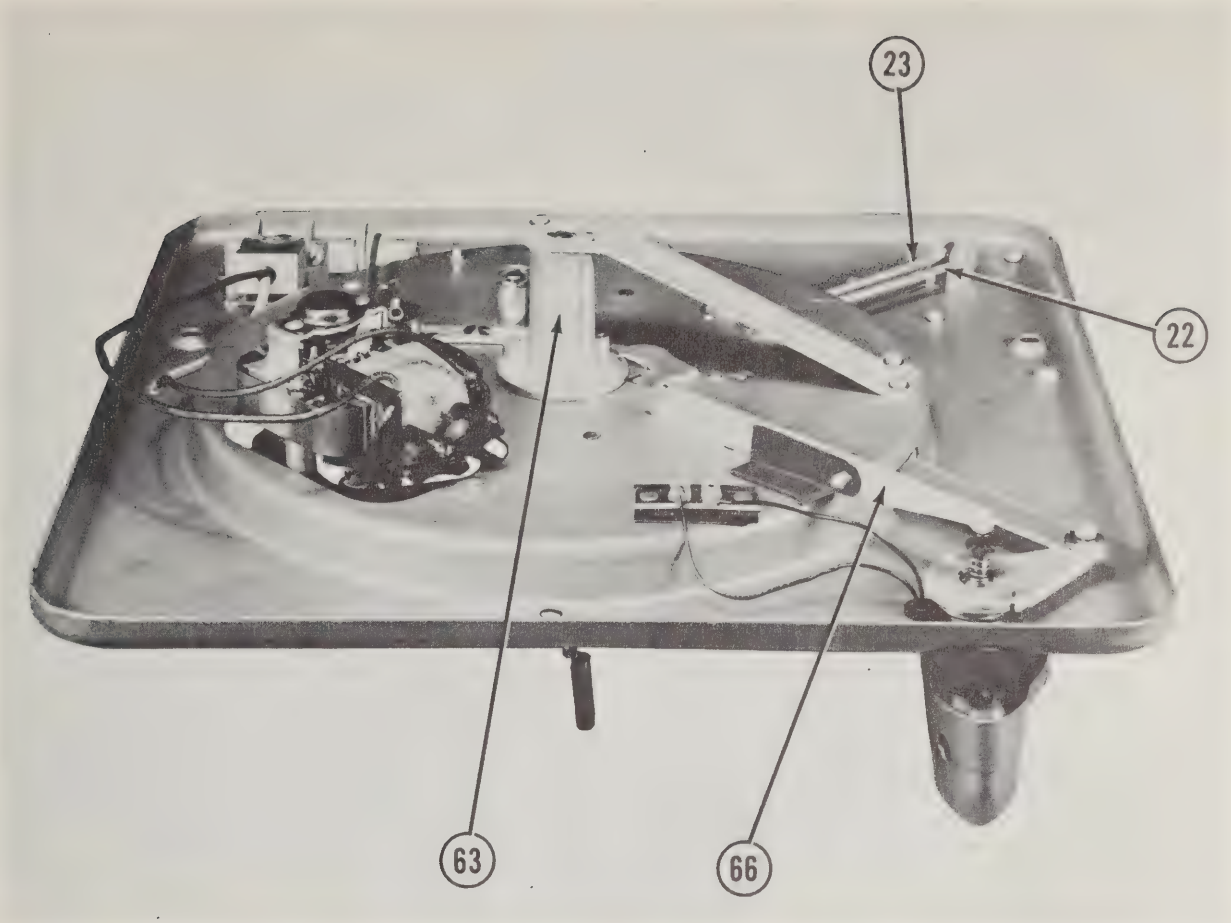
Figure 2

The normal position of the main gear (25) while in playing cycle is with the roller (33) centered in the slot of the main slide. In this position, the gear snaps into its index position.

To check indexing of the pinion gear, rotate the clutch assembly counterclockwise with the clutch engaged. The end of the clutch arm should be in line with the edge of the clutch lever as shown in Figure 1.

If the pinion gear has been removed it should be reassembled as follows: Place the large gear in its index position. Insert the pinion gear with the large brass rivet opposite the trip lever as shown in Figure 2. The clutch arm will rest on the trip lever. If the gear is properly timed, the turntable and clutch assembly will spin freely. If the clutch is not disengaged, remove the assembly and rotate the pinion gear one tooth clockwise.

For a finer adjustment, the end of the trip lever may be bent. The clutch arm should have the smallest possible clearance while in playing position.



REAR VIEW

TROUBLES

1. Changer fails to trip at end of record.

a. Remove turntable and adjust positive trip lever by moving it toward main slide.

2. Changer trips before end of record.

a. Remove turntable and adjust positive trip lever by moving it away from main slide.

3. Turntable speed slow.

a. Clean any grease or oil from the turntable rim and idler wheel.

b. Check for binding parts.

4. Stalling in cycle.

a. Clean grease from turntable rim and idler wheel.

b. Remove turntable and turn the hub by hand. If binding occurs, check for bent parts or heavy burrs.

5. Changer fails to drop records.

a. Check to see that the push-off link (22) is connected.

6. Fails to set down in 10-inch position.

a. Check to see that the positioner link (23) is connected.

LUBRICATION

Use fine oil sparingly on rollers and other moving parts.

Use Lubriplate or similar grease on the turntable thrust bearing. The center shaft hub and turntable bearing are self-lubricating and need no oil.

Remove any excess grease on underside of main gear. Do not allow any oil or grease to get on the turntable rim or idler wheel.

Do not oil the motor.

PARTS LIST

No.	Part No.	DESCRIPTION
1	1205	Center-Post Cap
2	2205	Center Post
3	3209	Tone Arm
4	3212	Cartridge
5		Needle Screw
6		Screw 4-36 x 1/4
7	3224	Turntable
8	9212	Turntable Shaft and Clutch Assembly
9	3210	Record Shelf
10	3211	Clamp
11	3219	Rubber Wheel
12	2210	Push-Off Plate
13	1219	Clutch Arm
14	1225	Pinion Gear and Cam Assembly
15	1224	Washer
16	4216	Channel Spring
17	1211	Push-Off Channel
18	1208	Push-Off Lever
19	1210	Size Change Lever
20	1220	Main Slide
20A	1222	Reject Pawl
20B	2231	Push-Off Stud
21	2237	Lift Lever Roller
22	4205	Push-Off Link
23	4206	Positioner Link
24	9206	Tone Arm Link Assembly
25	1217	Main Gear
26	2212	Push-Off Slide Rod
27	2213	Push-Off Lever Rod
28	3208	Record Support Base
29	1200	Base
30	4203	Pawl Spring
31		Screw 6-32 x 1/4" R.H.M.S.
32		Lock Washer
33	2222	Gear Roller
34		"C" Washer
35		Fiber Washer
36	9219	Tone Arm Mounting Assembly
37		Screw 6-32 x 1/2" R.H.M.S.
38		Lock Washer
39		Flat Washer
40		Spacer
41		Idler Wheel
42	3216	Tone Arm Rest
43		Fiber Washer
44	3204	Motor
45	1207	Position Stop
46		Screw 8-32 x 7/16"
47		Lock Washer
48	2219	Shoulder Bushing
49		Hair-pin Cotter
50	4204	Positioner Spring
51	4220	Hair-pin Cotter
52	2227	Roller
53		Screw 8-32
54	2201	Roller Stud
55	2209	Oilite Bearing
56	9226	Tone Arm Shaft Assembly
57	2216	Lift Rod
58		Lift Rod Spring
59	2219	Tone Arm Shoulder Bushing
60		Lock Washer
61		Screw 8-32 x 7/16 F.H.M.S.
62	1230	Bearing Bracket
63	3218	Turntable Main Bearing
64	1229	Ball Bearing Retainer
65	1226	Center-Post Support Plate
66	1216	Lift Lever
67	2219	Shoulder Bushing
68		Lock Washer
69		Screw 8-32 x 7/16 F.H.M.S.
70	4201	Reject Link
70A	1234	Reject Arm
70B	4202	Reject Spring
71	3203	Slide Switch

TOP VIEW

GENERAL INFORMATION

The Oak Model 6666 is a two-post changer designed to play up to twelve 10-inch or ten 12-inch records, not intermixed. The last record will be repeated until the changer is turned off. Manual operation is provided for playing off-size or home recordings.

Manufactured by OAK MANUFACTURING COMPANY, 1260 CLYBOURN AVENUE, CHICAGO 10, ILLINOIS

THIS CHANGER HAS BEEN USED IN POSTWAR PRODUCTION BY THE FOLLOWING MANUFACTURERS:

Air King Products Co., Inc.	1523 63rd Street, Brooklyn, N. Y.
Andrea Radio Corporation	27-01 Bridge Plaza North, Long Island City, N. Y.
Crosley Corporation	1329 Arlington Street, Cincinnati, Ohio
Eastern Amplifier Corp.	288 Eastern Boulevard, New York, N. Y.
Emerson Radio & Phono Corp.	111 8th Avenue, New York, N. Y.
Majestic Radio & Tele. Corp.	St. Charles, Ill.
Motor Parts Company	1229 North Broad, Philadelphia, Pa.
Mark Simpson Mfg. Co.	32-28 Forty-Ninth Street, Long Island City, N. Y.
Sonora Radio & Tele. Corp.	325 N. Hoyne Avenue, Chicago, Illinois
Stromberg-Carlson Co.	100 Carlson Road, Rochester, N. Y.
Templetone Radio Mfg. Corp.	New London, Conn.
Trav-Ler Karenola Radio & Television Corp.	571 W. Jackson, Chicago, Ill.
Wells-Gardner & Co.	2701 N. Kildare Avenue, Chicago, Ill.

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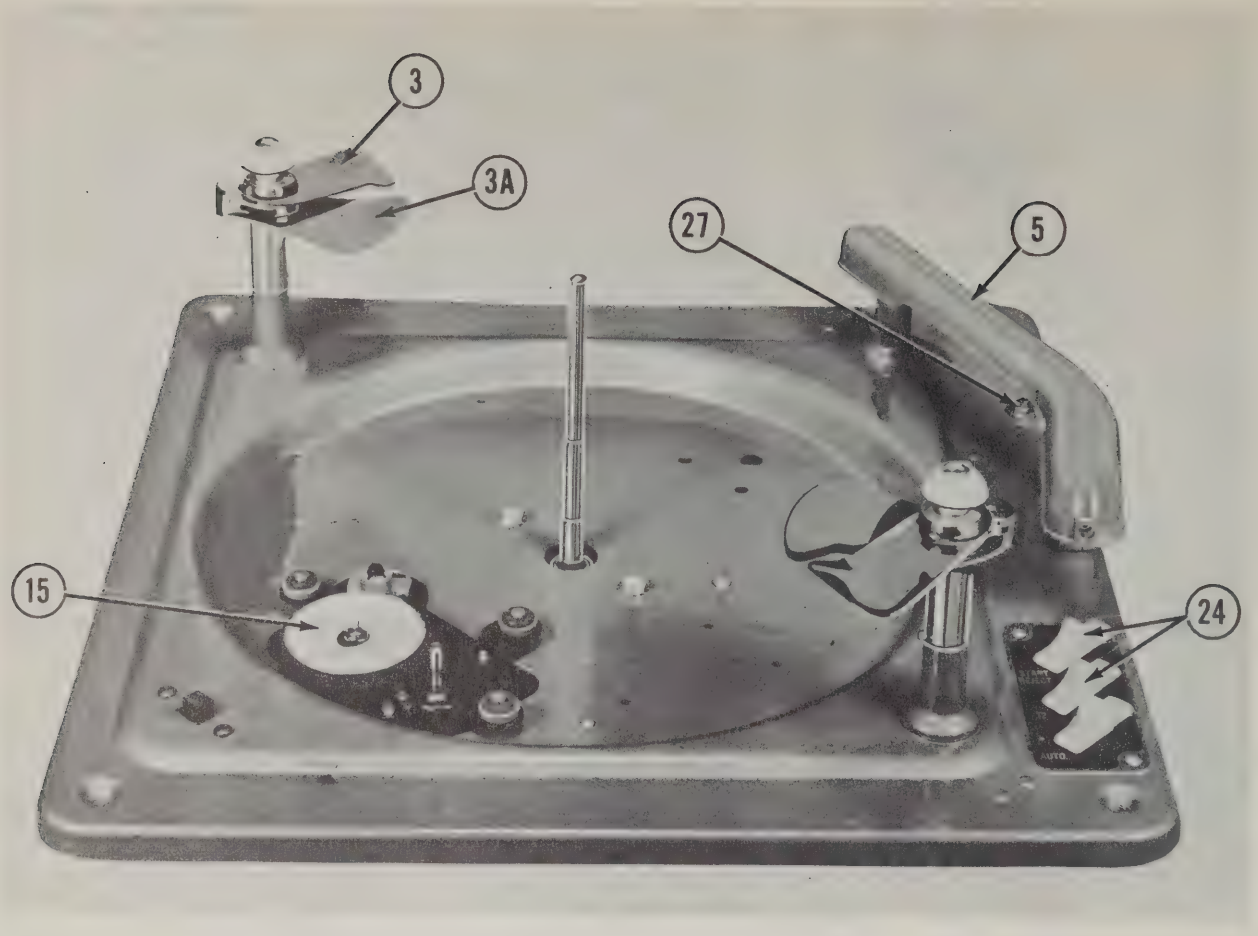
OAK
MODEL 6666

OAK
MODEL 6666



TOP VIEW LESS TURNTABLE

THE CHANGE CYCLE

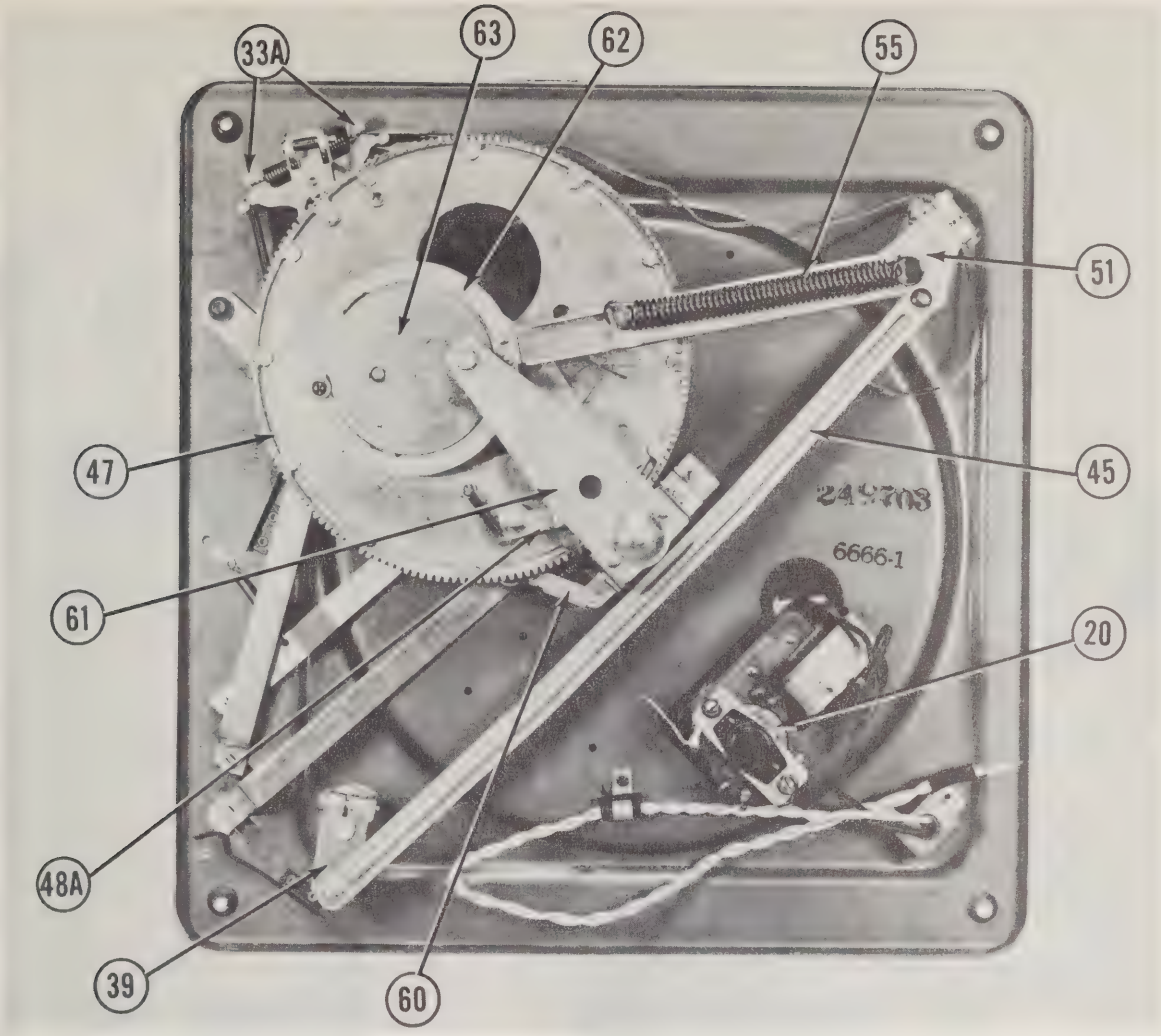
As the pickup arm moves toward the center of the record, the bracket on the pickup crank (34) presses against the trip screw (49). This screw is mounted on one end of the pawl latch assembly (48). The other end of this assembly normally holds the starting pawl (48A) away from the pinion. When the trip screw is pushed, the latch assembly releases the starting pawl, allowing it to engage one of the dogs on the pinion (56). This moves the main cam far enough for its teeth to engage the pinion.

As the main cam turns, the lift pin (26) and the indexing lever (64) are pushed upward by the inclined part of the cam. This lifts the pickup off the record. The cam follower (42), riding in its groove, moves the pickup (5) outward, clear of the record stack.

As the pickup moves out, the indexing pin (41) slides off the indexing stop (25) and is pushed upward by the indexing pin spring.

As the starting pawl passes the bracket on the pickup crank, the pawl is pushed in and latched in play position.

As the cam turns, the eccentric (63), acting



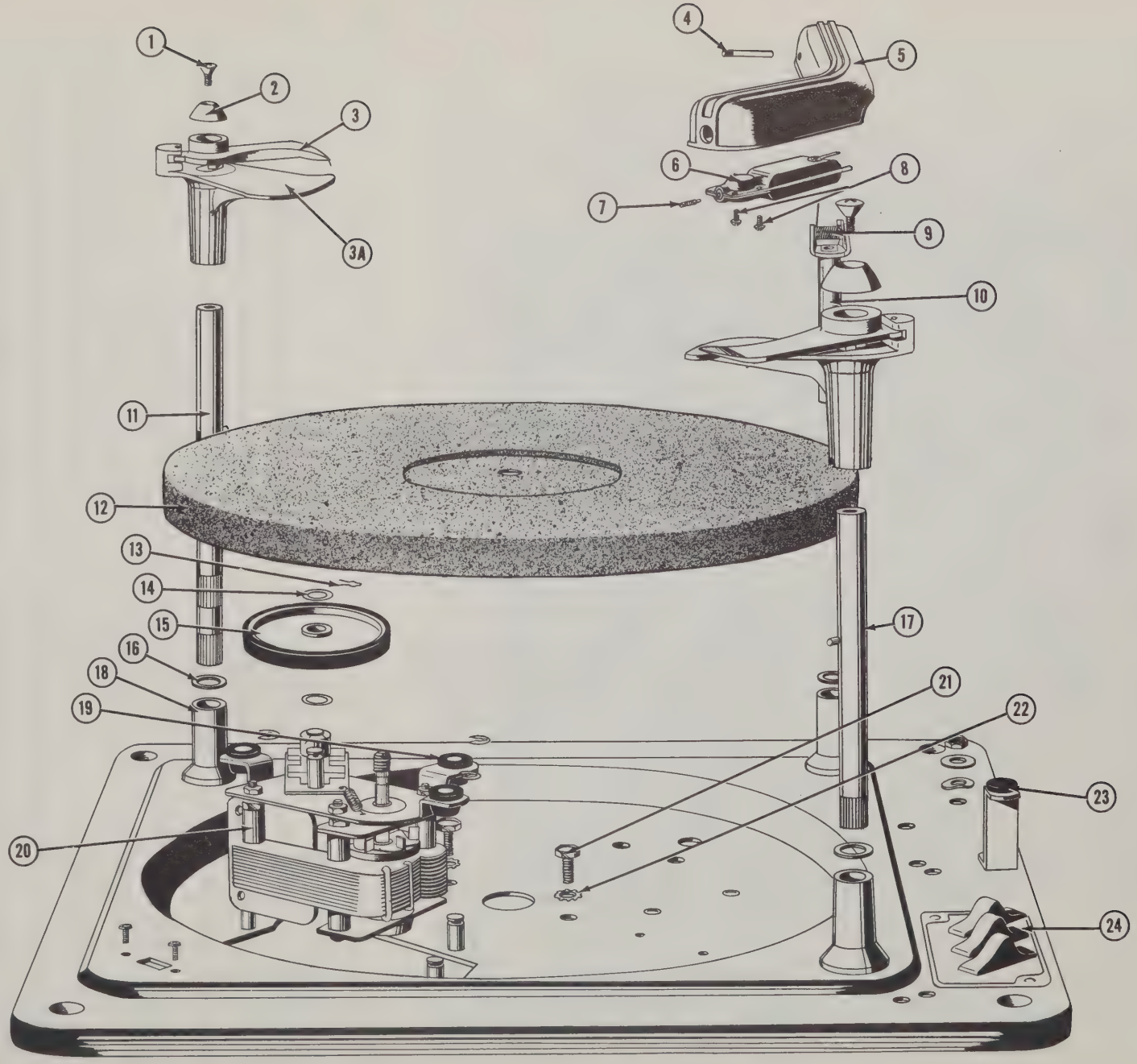
BOTTOM VIEW

through the eccentric arm shaft (52) and the tie bar (45), turns the changer blades to drop the bottom record to the turntable. Further rotation of the eccentric returns the blades to their normal positions, allowing the record stack to drop to the lower blades.

The cam follower (42) swings the pickup in until the indexing pin (41) comes in contact with the indexing stop (25), positioning the pickup arm for set-down. The lift pin then rides down the inclined track on the main cam, lowering the pickup to the record. At the same time the indexing pin is lowered, allowing the pickup to move freely across the record. The main cam then comes to rest position with the cut-away portion facing the pinion, and is held by the cam stop lever (60A).

Pulling the reject lever will start the change cycle at any time by moving the reject lever (31) against the pawl latch assembly, allowing the starting pawl to engage the pinion.

Manual operation is provided by means of the manual lever (32) which moves into position against the starting pawl (48A) preventing the pawl from engaging the pinion.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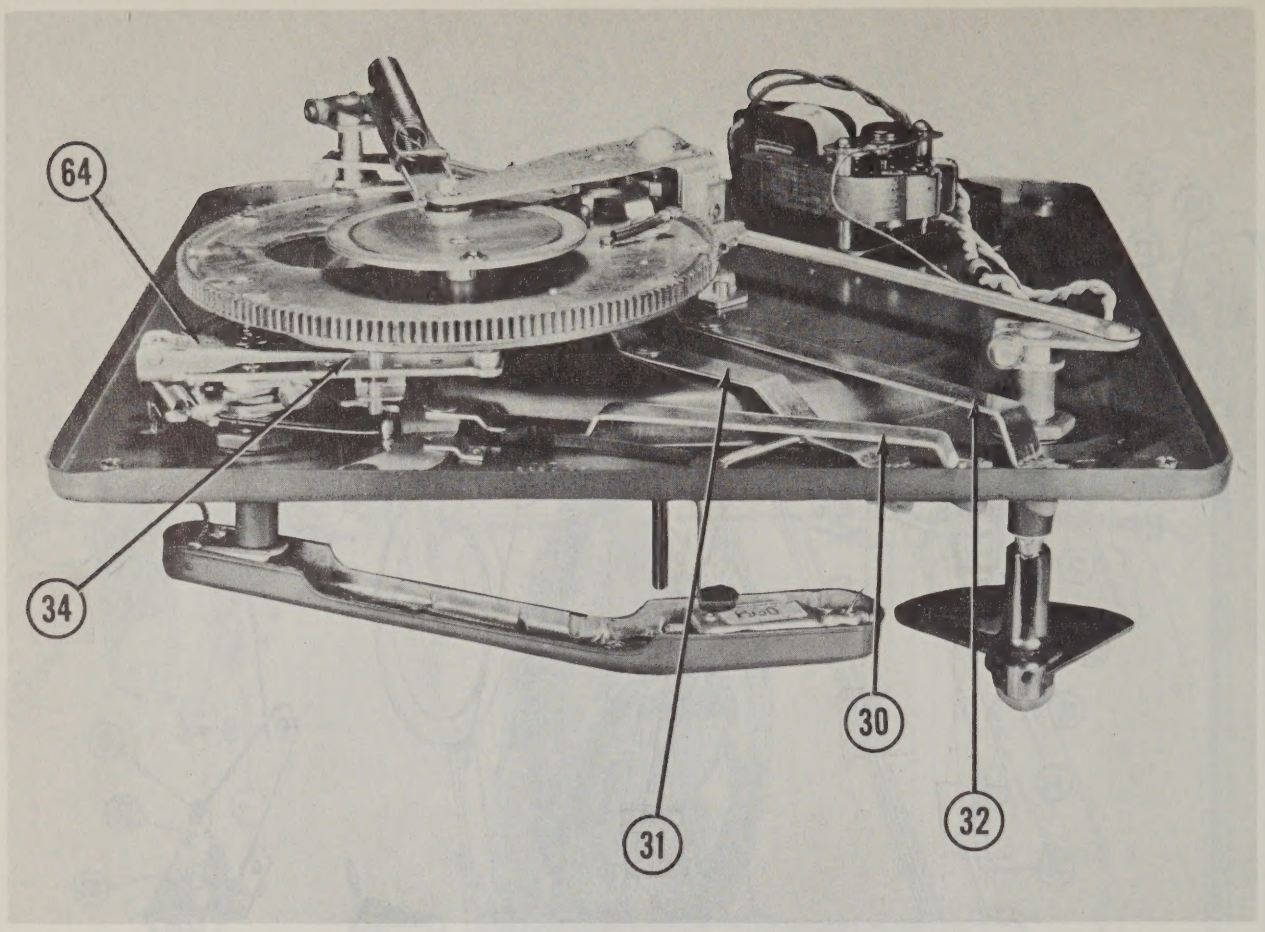


SIDE VIEW

ADJUSTMENTS

SET-DOWN POINT

The set-down point may be adjusted by loosening the nut on the eccentric bushing assembly (27) and turning the screw. This adjustment may be made from the top of the changer. The 10-inch and 12-inch positions are both governed by the same screw. Adjustment for one should be correct for the other.

If the landing position is out of range of the adjusting screw, the clamp on the crank may be loose. With the drive cam (47) in play position, move the cam follower (42) in toward the center as far as possible. Then move the tone arm to approximately 1½ inches from center and tighten the clamp. For fine adjustment, readjust the eccentric bushing.

TONE ARM HEIGHT ADJUSTMENT

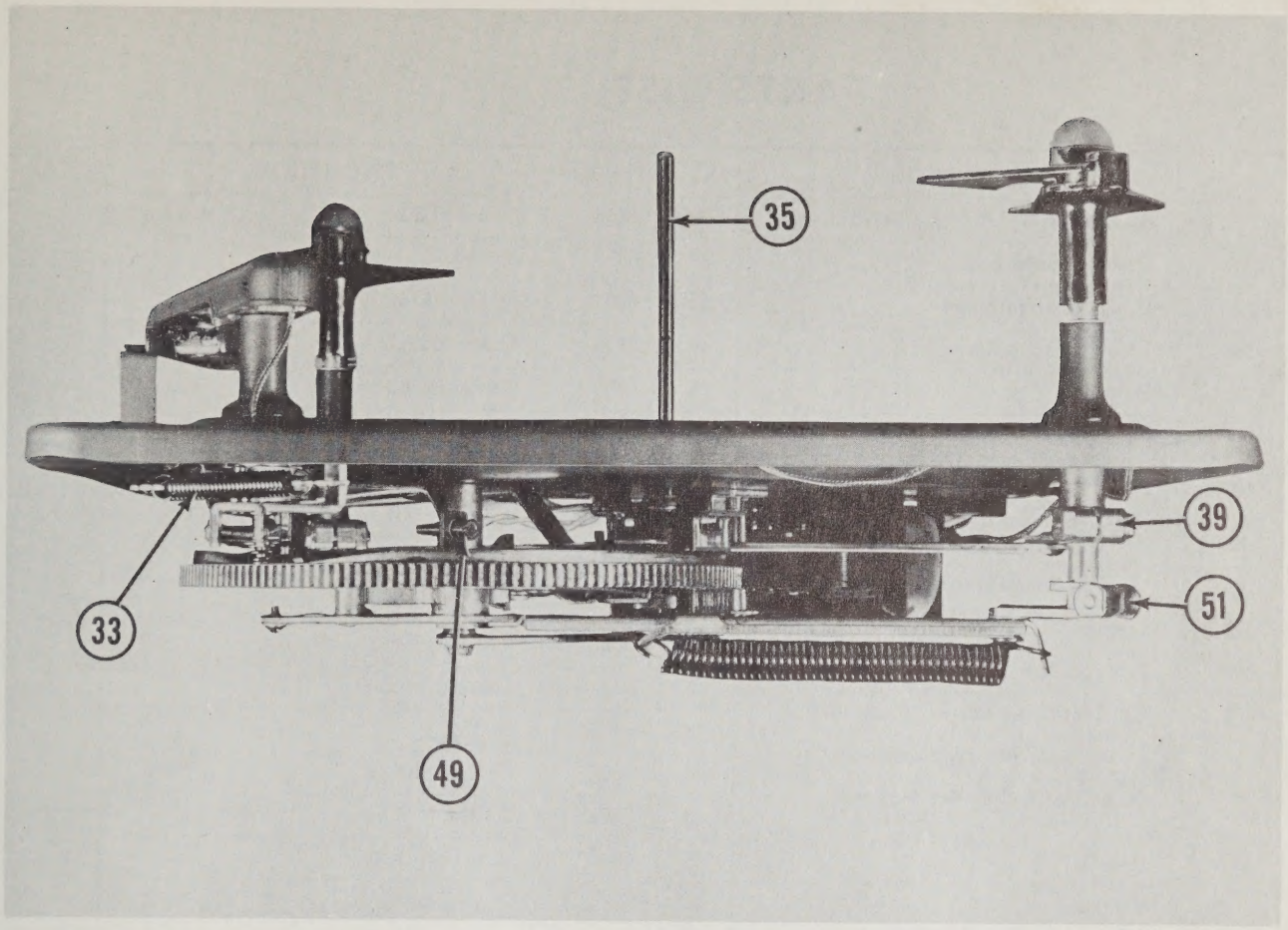
The height adjustment may be made by turning the lift adjusting screw in the top of the tone arm. Turning the adjusting screw clockwise lowers the tone arm. At maximum height during the change cycle, the needle should clear the turntable by 1¼ inches.

POSITIVE TRIP ADJUSTMENT

The adjustment of the trip screw (49) changes the trip point. Turning the trip screw clockwise will cause the mechanism to trip earlier. Backing the trip screw out will delay the tripping.

ADJUSTING THE RECORD DROP

The lower change blades are adjusted to drop a record simultaneously. For adjustment, turn the turntable manually until a record is just about to drop, loosen the driving crank (39), and adjust the blades so the record will drop from both blades at the same time. Then tighten the clamp.



REAR VIEW

TROUBLES

Continuous Cycling:

a. Check to see that the latch spring (50) is connected.

b. Check the cam stop spring (59) to see that it is connected.

Failure to Trip:

a. Check to see that the pawl spring (57) is connected.

b. Check the adjustment of the trip screw (49).

c. Check the pawl (48A) to see that it is not bent.

Changer Trips Before Completion of Record:

a. Turn trip screw (49) counterclockwise.

Incorrect Landing:

a. Check adjustment of eccentric bushing (27).

b. Check the wire spring which holds the cam extension (46) in place.

Records Drop on One Side Only:

a. Turn turntable manually until record is just about to drop; loosen the driving crank (39), and adjust the blades so they are even. Then tighten clamp.

Pickup Height Incorrect:

a. Adjust the screw in the top of the tone arm.

LUBRICATION

Factory lubrication should be sufficient for a long period of service. If desired, a drop of any good machine oil on the turntable shaft bearings, motor bearings, and frictional surfaces may be used once a year.

PARTS LIST

No.	Part No.	DESCRIPTION
1	4215-37	No. 10-24 x 3/8" Phillips Oval Hd.
2	4279	Changer Shaft Cap
3	6685	Upper Change Blade
3A	6684	Lower Change Blade
4	4231	Hinge Pin
5	4283	Pickup Arm
6	4242	Pickup Cartridge
7	7587 7587-1	Needle Screw (Slotted Head) Needle Screw (Knurled Head)
8		No. 4-36 Round Head Screw
9	7818	Spring
10	6869	Pickup Shaft
11	4229	Changer Blade Driving Shaft
12	7103 7107	Turntable (To be used only with 7102-1 motor Turntable (To be used only with 7106-1 motor)
13		Hairpin
14		Washer
15	7583 7584	Idler Pulley (For 7102 Motor) Idler Pulley (For 7106 Motor)
16	4248	Washer
17	4232	Changer Blade Shaft
18	6641-1 6641-2	Post-Changer Blade Post-Pickup Arm
19	7101 7105	Rubber Grommet (For 7102-1 Motor) Rubber Grommet (For 7106-1 Motor)
20	7102-1 7106-1	Motor (To be used only with No. 7103 Turntable) Motor (To be used only with No. 7107 Turntable)
21		No. 6-32 H.H.M.S.
22		Lockwasher
23	6642	Pickup Rest
24	6699	Control Button
25	6856	Indexing Stop
26	6876	Lift Pin
27	6715	Index Bushing Assembly
28	4206	Control Spring
29	4262	Reject Spring
30	6874	Index Link
31	6667	Reject Link
32	6668	Manual Link
33	6872	Spring
33A	6857	Scissors Arm
34	6694	Pickup Crank
35	6655	Center Post
36	6639-10	Screw
37	4383-1	Washer
38	6879	Nut (Special)
39	4224	Driving Crank
40	7478-4	Slider Switch Assembly
41	6862	Indexing Pin
42	6695	Cam Follower
43	6875	Spring
44	4206	Control Spring
45	7562	Tie Bar
46	6649	Cam Extension
47	4207	Drive Cam
48	7809	Pawl Latch Assembly
48A	6643	Starting Pawl
49	7555	No. 6-32 H.H.M.S.—Trip Screw
50	4216	Latch Spring
51	4224	Drive Crank
52	7145	Eccentric Arm Slide
53	4240 4239	Bearing Support Turntable Bearing
54	1842-3	3/16" Steel Ball
55	7146	Slide Spring
56	4246	Pinion
57	4210	Pawl Spring
58	7144	Eccentric Arm
59	6657	Cam Stop Spring
60	6660	Roller
60A	6659	Cam Stop Lever
61	6653	Sub-Frame Bracket
62	6646	Eccentric Ring
63	6645	Eccentric
64	6855	Indexing Lever

PARTS SHOULD BE ORDERED FROM MANUFACTURER OF RADIO